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CLINICAL MEDICINE

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In Dreams, you have won to your heart's desire,
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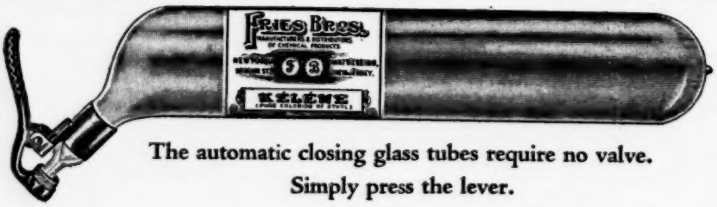

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CLINICAL MEDICINE

Dependable Therapeutic Fact for Daily Use

Vol. 31, No. 7 July, 1924

The A. M. A. Meeting

NATIONAL professional meetings in foreign countries, which are heralded to the world at large under the high-sounding designation of "congresses," impress many Americans as something wonderful and instructive.

A great national body of American physicians convenes annually in some city in the United States, and the event comes and goes more or less as a matter of course, partly because of its recurring regularity, partly because of its occurrence being close to our doors.

Nevertheless, the annual meeting of the American Medical Association exceeds in importance the foreign medical congresses, for a number of reasons.

The average practitioner attends the scientific section or sections in which he happens to be interested, in the hope of returning, after the convention, to this work a better-informed physician. In this he is seldom disappointed, because, even when none of the addresses contain anything startlingly new or original, no paper is allowed to be presented unless it betrays original work, even if that be along a beaten path. The discussions led by selected men and by any member or fellow present, bring out ideas or controversies which furnish food for thought.

Leaving the assembly hall, an opportunity presents itself to see clinical and pathologic expert work done by colleges, hospitals, research laboratories, and individuals, the excellence of which can only serve as a stimulus to others to appreciate the tremendous value of painstaking scientific work.

The American Medical Association awards medals and certificates for this class of exhibits, a bit of recognition which must serve as a spur to scientific investigators.

The commercial exhibits embrace a wide field of articles needed by the doctor. Books, instruments, appliances, apparatus, drugs, chemicals, furniture, hygienic and dietetic agents, and what not, are placed on exhibit for the scrutiny of the members of the convention and to the public.

The American Medical Association itself and certain public and social services exhibit their activities in a manner to be appreciated at a glance.

Last but not least our representatives, acting somewhat like legislative bodies, convene for the purpose of framing laws to govern our medical body politic and to insure better relations between the medical body and the

government of our land and, as far as that can be obtained, with the general public.

In view of the fact that fanatics and irrationally-trained minds constantly strive to influence their adherents to abandon the benefits of modern medical science and to rely for the relief of human ills on any but rationalistic methods, the annual meetings of the A. M. A. are of value to the masses in that the press brings to the public something from the scientific halls, which may stimulate those who care to do their own thinking to depend less on supernatural influences or half-baked mechanistic theories and more on biology to relieve them of their physical and mental abnormalities.

Every convention of this sort has certain extraneous but none the less valuable features which serve to develop an *entente cordiale* among former schoolmates, war comrades and scientific co-workers, lessening the feeling of rivalry and strengthening the human hands which make us kin.

The meeting just held in Chicago has been especially inspiring because administration, scientific and commercial exhibits and section meetings have been gathered under one gigantic roof, in a building which could furnish shelter to a small army.

It is not our intention to narrate the events, as every interested reader can get those in the *Journal A. M. A.* What this editorial does aim to do is to praise the men who had organized this convention, and to bring home the message that the physician who will give up a week or even less to break away from the drudgery of practice to come in intimate contact with old medical friends and the workers in our own profession, will benefit mentally, morally, scientifically and physically.

Every mind was made for growth, for knowledge; and its nature is sinned against when it is doomed to ignorance.—Channing.

RETIREMENT OF DR. GEORGE H. SIMMONS

Twenty-five years ago, Dr. George H. Simmons was amde editor of the *Journal of the American Medical Association.* This year, at the age of seventy-two, he goes into voluntary retirement. On June 9 a banquet was tendered Doctor Simmons in Chicago. This was attended by about five hundred of the most distinguished physicians in the United States, and the speakers were such men as Dr. Charles H. Mayo, Dr. William S. Thayer, and Dr. Frank Billings. Dr. Hubert Work, now Secretary of the Interior, was on the program but was unable to attend.

These speakers gave a wonderful testimonial to the contributions of Doctor Simmons to the cause of medical progress in this country. It was pointed out that, when he became editor of the *Journal* in 1899, it had a circulation of about 8,000 copies, while today it reaches nearly 90,000 every week. With the increased number of readers has come enlarged influence and prestige, much of which is due primarily to the unceasing efforts of Doctor Simmons to raise the standards of practice in this country, and his unsparing antagonism to what he believed to be false, degrading or untrue.

Doctor Simmons has been, throughout his editorial career, a storm center. It is natural that it should be so; first, because the man himself is aggressive, courageous, determined, permitting nothing to turn him aside from doing the things which he thinks should be done; and, secondly, because, in a transition period such as we have been going through in the last twenty-five years, intense animosities are sure to be aroused and, in such animosities, there are always outstanding figures for attack and defense, and Doctor Simmons was a shining mark.

Today, we believe the majority of medical men throughout the country, whether in the past they have been friendly to Doctor Simmons or not, will agree that the results of his work have justified his efforts, and will join with us in congratulating Doctor Simmons upon the completion of this quarter-century of efficient service.

The work of science is to substitute facts for appearances, and demonstrations for impressions.—Ruskin.

A LIBERAL EDUCATION

Offered free, a liberal education in the latest innovations of medicine, including medical appliances, drugs, scientific display, books, etc. A few hours spent wth the exhibits at the Municipal Pier, during the last American Medical Association meeting, more than repaid the effort. Whatever our professional hobby, or hobbies, might be, we found them exhibited there, in all of their various forms and ramifications.

From nationally famous infant foods to the latest thing in the treatment of colds—chlorine gas; all stages of pathological exhibits, even to a seminar on the dissection of fresh specimens; the latest instruments for operating

rooms stood side by side with large display bottles of coated tablets and beautifully colored synthetic medicinals. Not all of us can afford to take the time from our practice to spend a few weeks, or months, in a post-graduate course, but all of us who attend the A. M. A. meetings can well afford to spend the necessary time and energy to look over, with care, the exhibit hall. Of course, there is chaff in it all, but it is only a step or two that takes us to the wheat.

If we only had leisure, we would take a pencil and paper to figure out how many hours of our valuable office time we would have to spend listening to detail men and salesmen in order to get the same story—but without the actual first-hand inspection—of the new products. This very fact alone certainly should make it worth our while to spend a liberal amount of time with the exhibits, to say nothing of the additional features offered in the scientific section, or the friends encountered in our various peregrinations, up and down the aisles, or the breathing in of the atmosphere of progress and science which emanates from it all.

Blessed is he who has found his work; let him ask no other blessedness. He has a work, a life purpose. Labor is life.—Carlyle.

CONGRESS AS THE DOCTOR

The Chicago Daily Tribune, in its June 15 issue, published, editorially, under the above caption, a statement which we can do no better than to quote verbatim et literatim. We add that we feel under deep obligation to the "World's Greatest Newspaper" for its friendly attitude toward the medical profession.

The editorial in question reads as follows:

"Physicians who object to the provisions of the Volstead act regulating the use of alcohol in the practice of medicine are unanswerable. If the law allows a physician to prescribe spirits for a patient, as it does, the dosage is entirely a matter for the physician's judgment and not for congress to prescribe.

"The law adopts a principle which makes congress the doctor. The arbitrary dictum is that a patient may be given a pint of whisky every ten days as medicine, but no more, regardless of the opinion of the doctor in the case.

"Congress might have declared that whisky had no medicinal value. Some physicians hold that it has no peculiar medical value. Others contend that it has. In practice they can follow their own opinions. They will all agree that if it has value the doctor who prescribes it at his own discretion should have discretion as to the amount.

"Congress went on the assumption that the medical profession would misuse the prescription blanks. The drys decided that the person who violated the intent of the law and got whisky as a beverage because it was legalized as a medicine should have just as little satisfaction out of it as possible. Of course, they did not reach the man they intended to reach. The unscrupulous physician has no difficulty with this limitation. He has many expedients by which it can be avoided. The scrupulous physician finds that his practice is controlled by a law which affronts both his intelligence and his honesty.

"It is an absurd theory that congress may substitute itself for the physician in the treatment of disease, and it is no wonder that many physicians resent such an ignorant and dictatorial interference with medical practice."

It should not be assumed that, by printing this editorial, we endorse the unlimited and unrestricted use of whisky as a medicine. We do not. We believe that there are better remedies than alcohol for every purpose for which it is recommended. But, most physicians do not agree with us, and we believe that they should be at liberty to select and use those which they think best.

Nor should it be assumed that we favor any letting down by doctors of the legal bars for the widening use of alcohol as a beverage. We do not.

The medical profession should not and must not lend itself to the designs of those who are seeking to restore the reign of Old King Hooch. On this platform we stand.

In this connection, read the editorial "Ethyl Alcohol and Doctors". It states the views of another editorial writer.

The mind revolts against certain opinions, as the stomach rejects certain foods.—Hazlitt.

ETHYL ALCOHOL AND DOCTORS

Our line of thought covers the internal use of ethyl alcohol in distinction from other alcohols used in the arts and industries. We recognize two uses of ethyl alcohol aside from these, namely, beverage and therapeutic. Both uses have been indicted by a host of witnesses as unnecessary and unscientific for either food or medicinal value.

On the evidence submitted before the Pharmacopoeal Revision Committee, alcohol was deleted in 1910 and, since then, no further evidence has been offered to suggest a mis-

take; treatment has not been more difficult, nor has the mortality rate increased as a result. If it were shown that superficial observations had been made or hurried decisions forced, we might concede their demand for reopening the subject.

We hold that nothing new has been or is being offered. Nutrition experts are not showing any evidence of need for alcohol. Clinicians offer nothing to indicate that near and remote pathological changes are any less now than in 1910. Athletes in training and business men doing the world's work are not demanding the return of alcohol privileges, and alcohol therefore remains as much an outlaw as ever.

Strange it is, therefore, that there are those who insist that it reenter our Pharmacopoeia.

It is worth recording that the limited legal use of alcohol was given for control into the hands of two classes, both of which in their national meetings objected to the responsibility. We refer to the wholesale drug trade and the retail drug trade.

Manufacturers, distributors and prescribers each have privileges and responsibilities in the matter of the use of alcohol. In no case, however, is anyone compelled to handle it and the subject, therefore, resolves itself into a personal one. Some in each class have determined to stand strictly by the evidence and have nothing to do with alcohol. In fact, active-principle medication grew to its present volume partly on the claim to advantage in being non-alcoholic. There are manufacturers who do not employ alcohol in any finished product as there are those who have eliminated all other narcotics as well. This decision may be on a moral basis, scientific or economic. At any rate, the fact remains.

Our colleges of pharmacy object to training men for bartenders as many a retail druggist objects and refuses to act as such. The temptation is, in many cases, too strong for the druggist and doctor alike; and here is where we appeal to your dignity as a professional gentleman to have no part in continuing that situation which was responsible for the deletion of the drug in the 1910 Pharmacopoeia.

In the fact of indictments and decisions by organized national associations, it should be our duty to support, by personal action, the organizations to which we belong. That necessary moral consciousness can only be developed as we make personal decisions to be lived up to, at any cost.

At a recent medical college alumni dinner, we observed far too much looseness in abused privileges. One man had to be taken out drunk. More than one slept throughout the speeches in fine disrespect to the guests, to say the least. We owe something even to the extent of personal sacrifice in the interest of loyalty to our country and its laws. We scorn the traitor, the slacker.

Here is an opportunity to develop that moral fiber which recognizes the legal, economic and scientific background for existing laws. Make the thing both personal and professional. There is a better way therapeutically than the alcohol way. Study applied therapeutics along this line and use your influence and example to favor better clinical work by the use of better remedial agents than ethyl alcohol. Bring this to the attention of your hospitals.

If the best brains of our best people, legal, medical and other, decided against alcohol, with nothing to gain but the welfare of the people at large, we should support the program. Too much evidence exists of the value of the present laws in spite of signs of looseness here and there. This very thing makes it desirable that medical men individual, and *en masse*, support righteous legislation. All such action starts first with the individual. Classify yourself as one, even though you must stand out as the first.

The poor eat always more relishable food than the rich; hunger makes the dishes sweet, and this occurs almost never with rich people.—Mahabbarata.

THERAPEUTIC NIHILISM AND POLYPHARMACY

The gentleman who, in a facetious spirit, told the world that, if all the drugs were thrown into the ocean, mankind would be benefited while the fishes would be harmed, doubtless, felt that he was preaching a sermon by way of epigram.

Polypharmacy was then in vogue. The physician who could not write a prescription one page in length was an ignoramus or, at best, a poor fellow with a poor retentive memory.

A simple cough mixture contained from ten to fifteen ingredients, or more; a laxative ranked next numerically, and so on. Patients came to get a prescription and they got a prescription, don't you forget!

That was in the days when a physician would have felt that he was not earning his fee, if he were to give manly advice or prescribe a one-ingredient recipe. And, perhaps, the wrong was not so great; for, the

patient had confidence in the doctor's skill, and to him the narrow oblong strip containing Latin hieroglyphics was a mysterious document which tolerated the pharmacist to spend hours over the cooking stove or percolator to extract, from a number of mysterious places, their healing substances.

But, as medicine progressed along rational and scientific lines, the exact "premium diagnosis" became not only the "premium" but the principle in medicine and, unless a surgical operation or definitely-specific course of therapy was absolutely indicated, the administration of drugs began to be looked upon as something undignified, something unworthy of modern medical science.

Science had flooded the medical halls with great white lights. The microscope replaced the infusion; the test-tube the decoction; the blood-pressure apparatus the tincture; the cystoscope the extract; the basal metabolism apparatus the powder, and, instead of being handed out mere prescriptions, the patient is observing large cards being filled with pathologic data and, when the lengthy interview is over, he is advised to come back for a fluoroscopic check.

It is not the purpose of this editorial to hold a brief for polypharmacy. Nor need the readers conclude that the writer has become sufficiently pessimistic to decry the value of modern science; for the very contrary is the case. But, one cannot be blind to the fact that, in spite of our tremendous scientific advances, the economic status of the average general practitioner, or specialist for that matter, is far from satisfactory. True, there are a number who have "arrived", but, it is the great majority and not the few this editorial has been prepared for.

There is not a physician living, even in a medium-sized city, who does not know of a number of his clients who have become convinced Christian Scientists, or who praise this or that obscured medical cult as the sole means through which to obtain health and happiness.

Somehow, the dictum, that where there is much light there must also be deep shadows, does not apply to our case.

The majority of patients do not care the snap of a finger for your scientific terminology. They are in physical and mental distress and they want a cure, all right, but via the sympathy route.

Your expert knowledge with the microscope will not offset lack of tact; your most carefully made differential blood-count will not replace the human element. You are called upon to play a serious role, that of a healer in relation to a sufferer, and you dangle a lacquered brass appliance and a pipette before a distressed soul.

Oh, these are important, all right; but they should never be on parade—that's the thing we have in mind. Likewise, this "come back tomorrow" for another test, does not please. The patient leaves you in wonderment whether you really need so many appliances, and so much time to make a "mere" diagnosis and why you let him go back without doing something.

The patient is all wrong, of course; but, after all, what would your profession be without patients?

"But," say you, "do you, Mr. Writer, mean to imply by all this preachment, that I am to sit down and write out a page-long cough mixture or sedative or something?"

And we answer with an emphatic *"NO."* But, we do claim that the pendulum has swung to the extreme left.

The science of pharmacology is a live and real one. Drugs—not mere mixtures advertised as medicines under trade names—definite compounds produced by synthesis, organic preparations, and what not have demonstrated their efficacy beyond doubt, and the physician who ignores them is not only harming his patients but himself.

The opposite to a mixture of decoctions, infusions and solutions is scientific pharmacology, with single drugs of definite physiologic and therapeutic efficacy.

This is an important part of our therapeutic armamentarium, the neglect of which will enrich the sponsors of absurd cults and harm the cause of scientific medicine.

There never has been a great and beautiful character, which has not become so by filling well the ordinary and smaller offices appointed of God.—Horace Bushnell.

SPEED IN SURGERY

This is about the season when young colleagues assume the burdens of responsibility as practitioners of medicine. Many, no doubt, have had service as internes in hospitals and, attracted to surgery, will endeavor to operate on every possible occasion.

To these, as well as to some older colleagues who should know better, a word of advice may prove helpful.

There exists a tendency among general practitioners, and especially occasional operators, to envy the professional surgeon for

his operative speed.

How often has the writer of these lines heard remarks from those who sat through one or more operations in the amphitheater commenting with praise on the fact that such and such operation was finished in ten minutes by the clock.

Mind, not a word about the correct preoperative diagnosis; not a syllable about the pathology; not even a hint about the operator's peculiarities in dealing with pathologic conditions during the operative procedure, but an exclamation about the clock!

The remark means to imply that the surgeon who operates speedily is to be envied and imitated.

As a matter of fact, speed is something relative and, in itself, meaningless. Of course, when it takes a man an hour to remove an appendix, or two hours for a herniotomy, and you see the surgeon leave the operating room pale and exhausted and sweaty, the word "speed" begins to assume a very serious meaning. But, these are, as a rule, men who have not had adequate anatomic training and certainly little, if any, experience. Such men should not operate without a competent mentor until they have acquired at least a degree of technical proficiency.

But, when it comes to the professional operator, speed in itself is meaningless and, above all, is *not* the thing to be held up as *the* characteristic of great skill.

There are some surgeons who continually look at the clock when they operate, or call the attention of their audience to the shortness of time that elapsed between the first incision and the wound closure of given major operation. This impresses everybody but the experienced surgeons.

The experienced surgeon knows that surgery today means an anatomic dissection of living tissues; that bleeding must be controlled; that structures must be identified; that suturing of serosa and other delicate structures requires great care and attention to proper tension, and that all this requires systematic, careful work.

Operative surgery does not imply racing of any character. While some men are naturally possessed of nimble fingers, others are not so favored; but, more often, the latter prove to be by far the superior and more reliable surgeons.

Perhaps the moral of what has been said can be better appreciated by the following actual occurrence:

A certain young surgeon held a clinic in honor of his former professor of surgery, who visited him. The young surgeon pointed with pride to the fact that he removed an appendix in eight minutes. The professor replied that, while the operation was well done, it would have been still better done if accomplished in sixteen minutes, and that it would have been perfect if not done at all, since the removed specimen was virtually normal.

He that studies books alone will know how things ought to be; and he that studies men will know how things are.—Colton.

THE IMPORTANCE OF ROUTINE EXAMINATIONS

If there is anything we have preached in the past, in season and out of season, it is against routinism. The physician or surgeon who is a mere routinist will never amount to much. He is not much better than any craftsman or artisan who turns out one and the same work, day in, day out, after one and the same mould or pattern. He is not an artist and certainly not a scientist.

We do not think that the majority of practitioners of medicine care to be looked upon, nor do they desire to look upon themselves, as mere routinists. They have spent a lot of time, labor and money to acquire a professional title or degree; they have gone through physical and mental hardships to become officially incorporated as part of an organized and officially-recognized and controlled (?) profession. And the rôle of doling out medicines or prescriptions for minor, commonplace diseases, or affections, merely to obtain the means of buying *mulier* a new bonnet, is not a very elevating nor pleasing conception of the practice of medicine.

But, systematic routine and routinism are not one and the same. As concrete examples are likely to illustrate the point in view far more impressively and far more lucidly than mere descriptions, no matter how skillfully composed, let us narrate a real incident.

A young medical friend of ours has been engaged in the practice of his profession, in a town of about twenty thousand inhabitants, for the past three years. He started out filled with aspirations for a great and useful future. He had no routinistic ideas. He appreciated the scientific character of his work and he realized that the practical application of the principles of medicine is an art. Unfortunately, the folk who called on him for professional advice had trivial ailments. A little

cough, a little indigestion, a common cold—that was his "clinic." Such cases, to his way of thinking, merited no more than a little conversation, and an entry of the name, date of consultation, diagnosis and treatment given, in his record book. If an examination was made at all, it was perfunctory.

This editorial writer happened to be in that town, some time since, and, after listening to the complaints of the young colleague, ventured the following advice:

"Take every patient who comes in seriously. Do not judge a case by sight simply because the patient happens to walk in with brisk step and a few phenomena which are easily recognizable without physical examination. Give each man or woman a thorough, routinistic examination. Examine the eyes, nose, throat, heart, lungs, abdomen, reflexes, and add a urinary analysis. Make a record of every finding, whether positive or negative. Give careful advice and aid and make it impressive. You will, thereby, overlook nothing, find conditions you have not dreamed of being present and, in a short time, you will discover that you are looked upon with respect by patients and colleagues alike."

"You have forgotten to add a Wassermann test!" my young friend commented, with poorly hidden sarcasm.

"I have not forgotten it. I would suggest that, if you have the facilities, use it, by all means, on everybody. In my office in Chicago, no one can come in for any condition not palpably trivial and leave without having blood taken for a Wassermann test."

The answer to this remark was one which another would have taken as an insult, were it not that we took into consideration the bitterness of our friend, a bitterness caused by disappointment. The following letter speaks for itself:

—

"I am coming to the A.M.A. meeting and I hope you will give me a little of your time. I feel that I owe you much and that I have been a fool as well as a knave. I have paid dearly for not listening to your advice. . . . My eyes were opened to the real friendship you had for me, and to the sincerity of your advice, through a very sad experience. . . . Mrs. ——— [a prominent woman in the writer's town] had come in and complained of a little hoarseness. I felt her pulse. It was regular. I looked into her throat and noted a suggestion of pharyngitis of the subacute type. I gave her a gargle and some medication, but she did not improve. She came back and, as I found the same condition, I gave her the same treatment and advised her to rest for a few days.

"She did not return to me but went to Dr. D. and he came to the same conclusion, and he gave her treatment similar to mine. When she did not get better and became more hoarse, she avoided all of us doctors here. She joined a Christian Science church, which has a reading room right in my office building, and I heard that Mary Baker Eddy's influence with the Lord was more effective than my potions. . . . But, it is some satisfaction to be able to report that this influence did not last long, and, finally, her husband took her to Dr. L., in St. Louis, who cured this woman in an incredibly short space of time. I have definite advice that the treatments consisted of injections of neosalvarsan. The husband took a vacation, at Hot Springs. Oh, if I had only used a laryngoscope on that woman! I may not have had the skill to differentiate between a tuberculous and luetic ulcer of a vocal cord, but the Wassermann and antiluetic treatment would soon have confirmed one or the other. As it is, I am the laughing stock of all her friends. I have lost the husband as a patient, and the worst of it all is that I am gagged and cannot say a word in my own defense without risking a blackmail suit. . . ."

—

We have let our friend write the principal portion of this editorial. We add the dictum that experience is a good teacher.

Some men, like modern shops, hang everything in their show windows; when one goes inside, nothing is to be found.—Auerbach.

PATHOLOGY AND PAIN

That classic on "Pain", by Hilton, was inspired by a deep appreciation of the real meaning of the symptom and its near and remote influences on both patient and doctor. Today the importance of pain is no less. In fact, when competition between doctors and doctors, and between doctors and dispensaries, is so keen, it remains that success in no small measure is dependent on the proper recognition of the importance of the etiology, pathology, prognosis, and treatment of the symptom pain.

We intend to suggest a line of thought which we hope will stimulate you to a study, which the subject deserves. What could be better for a six-weeks' course of self-directed home study for the summer?

We shall refer, first, to pain as inflicted by the surgeon in such minor surgery as tonsil work, stitching of wounds, setting of dislocations and fractures, and opening of abscesses. Second, we shall touch on those several varieties of pain for which, as the prominent or principal symptom, the patient seeks your services.

It is a matter of observation that the dental profession uses far more local anesthetics than the medical profession. Is it not possible that this is a result of the necessity for self preservation? Almost invariably, pain is the symptom that demands dental intervention and often that is, or has been, preferred to the further pain of dental instrumentation with therefore the neglect of treatment. Today, however, dentists have patients trained to call regularly for observation and diagnosis. Preventive medicine. This confidence has been built on service rendered to satisfied patrons so that the slogan, "the dentist who does not hurt", has a real meaning. Dental anesthesia has progressed so far that the dentist actually eliminates even the pain of the prick of the needle.

Your own experience confirms the statement that thousands of needlessly painful operations are performed every day in both dispensary and private practice. It may be thoughtless on the part of the doctor and part of the accepted and approved methods, but why? We make bold to state that this carelessness has cost many dollars to the medical profession and lost many patients to quackery of various and all kinds.

Too many painless operations are performed under general anesthesia entirely overlooking those unnecessary hours of postoperative pain, distress and anxiety, all of which deter the rapidity of repair which is most important to the patient's welfare and the doctor's reputation and success.

Picture what it would mean in effective advertising value to any industrial surgeon or private practitioner to earn a reputation as "the surgeon who does not hurt"!

There is no good excuse for anything else and, with the perfected local anesthetics now available, any doctor can intelligently select the best for each case and easily employ the latest approved and improved of the many to be had.

So much for the pain of surgery.

What have we to say for the treatment of pain as the symptom for which alone, so far as the patient is concerned, he seeks your services? Right here, diagnosis may be beautifully scientific but not always practical, since it takes too much time. Your reputation is at stake, not as a diagnostician but as a therapeutist. The etiology is secondary to the pathology, and this in turn secondary to the selected treatment. This demands your studied consideration.

We have to deal essentially with but two fundamental conditions, namely, acute spasmodic pain and the pain of inflammation. The former is sharp, acute, severe, usually localized and of recent onset. The condition has not lasted long enough for the classic pathology of inflammation; therefore, antiphlogistics are not indicated. Such a pain in the abdomen, for instance, may be renal or hepatic colic, or uterine, ovarian or intestinal in origin. Irrespective of the organ affected, the condition calls for pure antispasmodics. It is surprising to doctor and patient alike what may be accomplished with the properly-selected remedies, properly used. It is especially of value to the doctor if he tells the patient in advance that the remedies given will produce such and such effects in so many minutes. This can readily be done if you know your therapeutics.

On the other hand, inflammatory pain produces an entirely different mental picture for the doctor and, therefore, calls for entirely different medication. Here we have blood-serum extravasation with slowing of the circulation and pressure on nerves, all of which must be considered in selecting the indicated remedial agents. This character of pain calls for cardiac stimulation, local depletion, antiphlogistics or sedatives, any one or several.

In the spasmodic pain, frequently nothing remains to be done after the securing of relief. In inflammatory pain, usually a subsequent diagnosis is necessary. This does not concern our thought here but most important is the patient's immediate comfort as determined by removing the pain.

So much depends on this that we urge your first and best thought and study to those methods which will most quickly give you a satisfied patient who will gladly add to your reputation as a doctor who knows his business when it comes to pain and its relief.

Leading Articles

Parathyroid Therapy in Chronic Toxemias

By MAXIMILIAN KERN, M. D., Chicago

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THE term toxemia, while very vague, is indicative in a general way of a definite pathological picture. A toxemia may be attributed to some septic focus, which, in time, necessarily produces a systemic toxic state. From the viewpoint of the endocrinologist, definite conclusions can be drawn.

Though the problem of determining the influence of the ductless glands on certain pathological conditions is quite recent, researches on the effect of parathyroid therapy in chronic toxemias have been fruitful of much information. Their study suggests the association of ductless-gland therapy with certain metabolic disorders. In reviewing the consensus of opinion in the literature, one is tempted to mention the results of his limited experience with parathyroid in the field of endocrinology.

It is fairly well recognized that a chronic toxemia is due to an error in metabolism (a disorder of metabolism) and that this disturbance bears a relation to the calcium content of the blood. In fact, it has been definitely shown that the blood of patients, in whom a toxemia exists, is substandard in calcium. The figures may vary, depending upon the degree of the pathological condition present.

In the chronic toxemias associated with a calcium deficiency, Groves and Vines, of Cambridge, found that the permanency of results in influencing the metabolic disorder depended chiefly on the administration of parathyroid substance. Accordingly, it was concluded that the toxic substance produced by varicose ulcers in some way injured the parathyroid glands and also combined with some of the ionized calcium of the blood. In this way, the calcium balance of the blood became disturbed, and the parathyroids were not able to rectify it.

Theories Regarding the Parathyroid Action

The belief, that most chronic diseases are due to a toxemia and that a septic focus is always present in such conditions, is not entirely new. Although the tendency has been to evade this assumption, the fact remains that toxic states exist in the majority of obscure chronic diseases and the toxemia is usually associated with a disturbance in the calcium metabolism. This latter phase is manifested by a decrease in blood calcium, presumably influenced by the parathyroid glands.

On the other hand, a recent writer has summarized the unsatisfactory state of present-day knowledge by pointing out the three foremost theories now being debated; namely, that the parathyroids control the metabolism of guanidin, and, by so doing, regulate the tonus of the muscles; that they regulate the metabolism of calcium; that they are involved in the acid-base equilibrium of the body, so that their removal may cause alkalosis.

The work of Dragstedt, at the University of Chicago, on parathyroidectomized dogs, is of considerable interest. It had to do with the problem of parathyroid tetany. It was concluded from this investigation that parathyroid tetany is due to an intoxication, and that the responsible toxic substances come chiefly from the gastrointestinal tract. It is supposed that they arise through the activity of the proteolytic group of intestinal bacteria, and are probably, for the most part, protein-cleavage products of the nature of amins. The function of the parathyroid glands is to prevent intoxication by these poisons.

Clark, in the *Glasgow Medical Journal* writes favorably of the results with parathyroid therapy in infantile spasmophilia, although no definite explanation of the action of the substance is given. The case reports are quite encouraging and demonstrate the clinical value of this type of glandular therapy.

The report of Scott, in the *British Medical Journal* of December 15, 1923, was of much interest. His studies involved the calcium de-

ficiency in sprue as a parathyroid dysfunction. Scott points out that the amount of calcium in the blood does not depend solely, or even in the main, on the amount of calcium salts taken in the food or as medicine, but on the efficiency of the calcium-regulating mechanism —the parathyroids with their twofold function of detoxication and regulation of calcium metabolism. Calcium deficiency is, therefore, regarded as an indication of toxic absorption. In cases of sprue, in which fats are in excess, there is an excessive excretion of calcium in addition to intoxication of intestinal origin; in other cases, there is protein excess with intestinal toxin-formation. In both groups, the parathyroid detoxicating function is overburdened, with a resultant disorganization of its calcium-regulating function, while there may be, in addition, diminished calcium absorption. Both functions, therefore, of these glands are interfered with.

Parathyroid has, of late, been employed with much benefit in hayfever, hyperesthetic rhinitis and the asthmas. These diseases have, in many instances, been proved to be based on a low blood-calcium content. Novak and Hollender, in their publications, point out that the results of their investigations clearly showed that the absorption and retention of calcium in these conditions depended on the administration of reliable parathyroid substance.

Vines, who has conducted much research with parathyroid, recently emphasized his contention that parathyroid therapy is a means of reestablishing the normal endocrine balance of the body, which infection has disturbed

Biological Reactions

One of the great desiderata in medicine, especially with reference to disturbances of the endocrine glands, is, to determine by some feasible plan which of the glands is involved; in other words, biological testing. While this method is applicable to any glandular involvement, it lends itself particularly well to parathyroid disorders. Although no claims for its clinical significance or value are attempted at this time, for reasons which will be enumerated, test medication in endocrine dysfunction is a method I have frequently employed. By this means, much valuable information regarding the hypo- or hyperfunctioning of a particular gland has been obtained. At its best, however, this plan is thus far merely speculative, and often unyielding of definite findings.

In my work, I found that many cutaneous reactions are obtained from inoculation with glandular extracts. The relative strength or absence of such cuti-reactions appears to determine the functional value of the gland in question. A similar work was conducted in the medical clinic of the Royal University of Naples by R. E. Leone, the results of which have just appeared in the press. These investigations were inspired by Landolfi and Castellino, who brought the subject before the Italian Congress of Internal Medicine, in 1921. Various hormones obtained from animals were subcutaneously injected into the arms of patients with manifest glandular syndromes, i.e., clinically predominant hypophyseal, thyroid, parathyroid, ovarian, suprarenal, or other syndromes. Proper controls were used in all cases.

Various reactions were noted and the degree indicated by +, ++, or +++, if a hyperfunction exists; and "—" if a hypo- or dysfunction, exists.

Theoretically, this plan appears to carry with it considerable merit, but, from our knowledge of the results and reactions obtained in foreign-protein desensitization, the value of such biological testing must be considered with great speculation. Until such time, when further investigation will show that biological testing in endocrinology is an accurate procedure, endocrine therapy must still be regarded as more or less empirical.

Methods of Measuring Blood Calcium

There are various methods now commonly used to measure the blood calcium in small amounts of blood. The method advocated as being the one best adapted to this work is known as the permanganate-titration method. The technic as employed in the laboratory is as follows:

1. Collection and clotting of blood.
2. Centrifugation of serum.
3. Precipitation of the serum with an equal amount of 1½ percent ammonium oxalate solution.
4. Centrifugation of liquid which is allowed to stand for eighteen hours at room temperature.
5. Withdrawal of supernatant liquid.
6. Oxalate sediment is thoroughly broken up with a strong stream of distilled water until a volume of 35 Cc. is reached.
7. Further centrifugation of tube and withdrawal of supernatant liquid.
8. Addition of 5 Cc. of normal sulphuric acid to the calcium oxalate and mixture warmed to within 10° of the boiling point and titrated with N/100 Potassium permanganate solution. 1 Cc. permanganate solution equals 0/20 mgs. calcium.

Parathyroid and Detoxication

The blood-calcium determination, as compared with what is accepted as the normal

figure, is often an index to the degree of toxic state present. The contention, that the calcium can be raised by detoxication without parathyroid therapy, is correct. It is also true that the blood calcium can be raised and brought up to normal by the administration of calcium salts—orally, intravenously or intramuscularly—and also by such valuable agents as codliver oil and phosphorus. This was proved experimentally by many workers in such diseases as rickets, tetany, spasmophilia and even in asthma. However, the methods of detoxication without the use of the endocrine adjunct lacks the important factor of permanency of calcium absorption and retention. Parathyroid accomplishes this beyond a question of doubt, as has been illustrated by Grove and Vines, in their work on leg ulcers; by Scott, in sprue; and by many others. For this reason alone, the exact indication of parathyroid therapy in toxemias of obscure or apparent origin cannot be questioned. The error must not be made of considering the endocrine substance a panacea or an agent capable in itself of eradicating the toxemia and its septic focus. This must be accomplished by recognized methods—the parathyroid being depended upon as a most valuable adjunct in the detoxicating process and as a means of permanently fixing the calcium in the blood.

Parathyroid therapy is indicated in many conditions if the blood calcium determination is low. Biologic testing is still a doubtful procedure and, while it may be performed to act as a check, for reasons mentioned earlier in this paper, it must not be relied upon to any great extent.

Conclusions

Parathyroid therapy has proved to be of great clinical value, particularly so in a variety of pathological conditions based on a low-blood calcium. While clinical experience has demonstrated this, certain investigators who have conducted animal experimentations further substantiate the results. The indications and worth of parathyroid substance have not been given sufficient consideration by physicians. The endocrinologist is cognizant of its value and, as a consequence, he is often in a position to attain success in what has been pronounced as an incurable condition.

The toxemia which is the basis of disturbed calcium metabolism is of vital import. The focus may be apparent or obscure. If the former, its removal aids materially in the successful results anticipated; if the latter, the problem is more difficult. Although very favorable results are frequently obtained, these are probably due to the detoxicating influences which parathyroid is said to possess.

That detoxication in itself alters blood-calcium deficit, is not argued. Granting that it does, detoxication by the usual method is not always ample or even possible and, if accomplished, the results are more frequently not of a permanent nature. This is chiefly so when the focus is obscure. For these reasons, and also because of the recognized functions of the parathyroid, the role of parathyroid therapy in toxemia seems not only rational but essentially proper.

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The Metric System

As It Applies to The Physician and Surgeon

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METER, the unit of measurement of length, 40 inches long, concerns the man who deals in comparatively large dimensions. Generally speaking, the unit is inapplicable in the daily transactions of members of our profession. Being a unit of the metric system, a per mille system, the meter is subdivided into one thousand parts, each part forming a new unit, bearing the distinctive name *millimeter*. For purpose of ready comparison, we may state that the long diameter of the distal phalanx of your thumb measures twenty-five millimeters. Thus, "by the rule of thumb," you may readily measure anatomic dimensions. In all general measurements, the millimeter unit alone should find acceptance in our daily

transactions. Such units as decimeter and centimeter should be cast aside, for they must necessarily lead us into the use of fractions, which the metric system endeavors to avoid entirely.

To the microscopist, the millimeter unit is entirely too voluminous,—he divides this unit into 1000 equal parts, creating new units, *micrometers.*

For us, as general physicians and surgeons, there exists only one unit, applicable in the measurements of linear dimensions, the *millimeter,* its length being equal to the length of one twenty-fifth part of the length of the distal phalanx of your thumb, or the one twenty-fifth part of an inch. The unit of measurements of weight of solids is the *Gram.* A nickel five-cent coin weighs five Grams, hence the weight of one Gram equals the weight of one-fifth part of the nickel. Subdivided according to the laws of the per-mille metric system, a milligram equals the one thousandth part of a Gram. Gram and milligram are the units to be employed by you in your daily transactions involving weights of solids, whether such refer to drugs which you dispense, or to the body and anyone of its parts which you endeavor to benefit. Avoid such terms as decigram and centigram, for they again will force you into the use of fractions. To express dosage, it becomes occasionally necessary to employ the term *microgram,* this being the one-thousandth part of a milligram. A single dose of the size of a microgram cannot be weighed on a pair of scales, but aggregations of micrograms form milligrams, which can be weighed on delicate scales.

In the book before me, I notice that the dosage of conium is quoted as 0.06 to 0.3 g. The figures, conveyed to my brain through the medium of my eyes, cause confusion—I fail to clearly comprehend the comparative values. To read the passage, I would either say: "naught decimal naught six to naught decimal three Grams, (which would cause more confusion), or "six centigrams to three decigrams," (Still more confusion!) or six one-hundredths to three one-tenths Grams," (Despair!)

No wonder, you did not use the metric system heretofore! If, however, you fill in the proper quota of figures for milligrams, you will have 0.060 to 0.300. Then you would read, 60 to 300 milligrams, and the comparative values at once become evident, whether you view the figures or read them. The quantities quoted in this book evidence the fact that they are values which have been translated, more or less literally, from the antiquated apothecary system. The dosages of drugs are not absolutely but only relatively such. It cannot be stated that the single dose of Conium must never under all circumstances be less than 60 nor more than 300 milligrams, but that, in average conditions to average individuals, the use of conium in doses ranging from 60 to 300 milligrams has produced certain results. Quotations reading 50 to 250 milligrams would conform to the general acceptance of the metric system.

To a few drugs, the use of the microscopic unit, microgram, the one thousandth part of a milligram, is applicable.

Substances existing in the liquid state are to be measured in a graduate. The weight of a *grama* of water equals the weight of a Gram of a solid substance. The presence or absence of final a determines whether the substance under consideration is to be weighed on a pair of scales or is to be measured in a graduate. A teaspoonful of water measures five gramas and weighs five Grams. Hence, as far as water is concerned, the terms Gram and grama are synonymous. The results are the same, whether you weigh a quantity of water or measure it in a graduate, but, generally speaking, it is less difficult to measure a liquid. In writing prescriptions, the terms Gram and grama are omitted, it being understood that the druggist will use his scales to measure solids, and his graduate to measure liquids. At times, it may become necessary to affix the distinguishing marks, g or ga: for, in many instances it makes a great difference whether the determination of quantities of a substance under consideration is effected by means of a pair of scales or by means of a graduate. When liquids are dispensed, it is customary to prescribe teaspoonful doses. This is very convenient, not only to the patient who is to consume the mixture, but also to the physician who is to calculate the quantities of the individual ingredients which enter into the mixture. Remember that a teaspoon holds 5 gramas; make total quantities 10 doses or multiples of 10 doses.

	1 dose	10 doses	20 doses
℞ Ammonii chloridi	0.250	2.500	5.000
Syr. Simplicis	2.500	25.000	50.000
Aquæ dest. q.s.ad	5.000	50.000	100.000

To prescribe a total of 100 gramas, has many advantages, viz:— it contains 20 doses, just the right number. The individual doses are easily calculated. Move the decimal period of the given dose one figure to the

right, then double the quantity. The prescription, as a whole, is easily remembered; for, each ingredient forms a percent of the whole. Thus in the prescription given (20 doses), the ammonium chloride forms 5% of the total; the syrup, 50%. As the latter is inconsequential, you may say that you prescribed a 5% solution of ammonium chloride. If, in the future, you wish to prescribe a stronger or a weaker solution, you need but change the 5 to 6 or 4 to 2 and leave the balance of the prescription unchanged.

Résumé: Determine dimensions by the use of the term millimeter, determine quantities of solids by the use of the terms Gram and milligram; determine quantities of liquids by the use of the terms grama and milligrama. That is all there is to the use of the metric system, as far as you are concerned.

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The Employment of Arsphenamine

And Its Derivatives in the Modern Treatment of Syphilis

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[*Concluded from June, p. 376.*]

ANOTHER method of procedure in treating primary syphilis, suggested by some physicians, is the extirpation of the syphiloma —the site of the treponemas. This may be done chirurgically or by electric cauterization (Solomon,[24] Tataru,[25] Pollitzer[2] and others). Many, however, are opposed to this practice. As Feldman[4] states: "In the light of present knowledge, it would seem at best a useless procedure, when we consider the fact that systemic invasion occurs as early as forty-eight hours after infection and long before the chancre makes its first appearance."

Patients cured in the primary stage must be under regular observation, both clinically and serologically, from one and a half to two years. At the end of this period, the spinal fluid should be examined and the examination repeated from time to time.

Primary syphilis with a positive Wassermann blood reaction should be accorded the same treatment as that given in secondary syphilis.

Secondary Syphilis

While complete sterilization of syphilis in the early primary stage (when the Wassermann test is negative) is very frequent, it is more difficult after the disease has become generalized, as in the primary stage with a positive Wassermann reaction and in the secondary stage.

A negative Wassermann reaction, after a brief course of treatment, should never be regarded as an indication of the death of all spirochetes in the body. Experience demonstrates that a lapse of treatment at such times is commonly followed by a recrudescence of a positive Wassermann.

The treatment for secondary syphilis is largely that of primary syphilis, save that more courses should be given, regardless of the outcome of the Wassermann test—i.e., there should be an irreducible minimum of treatment.

In a large percentage of cases, arsphenamine alone can effect a cure (Schamberg, Hazen), but, generally, combined treatment is the practice. The minimum treatment at the secondary stage should constitute three courses of 8 to 10 injections of the arsenical employed together with three courses of mercurial injections or inunctions. No definite rule, however, can be set down as to the number of treatments that any given patient may require.

"It may be disappointing to some physicians that the trend of medical judgment is, to extend the period of treatment. It must be realized, however, that it is far better in the interests of the patient that he should receive medication in excess of that which is necessary to cure, rather than that it should fall just short of the required amount. The Wassermann test should be taken from time to time for two years and mercurial treatment should be continued in the face of a negative outcome." (Schamberg[3]).

Jadassohn[26] suggests that the Wassermann reaction be controlled for four years in cases of cured secondary syphilis and for three years in primary positive cases; also that the spinal fluid should be examined during as well as at the end of this period.

During treatment of secondary syphilis with arsphenamines, there sometimes occurs an intensification of the symptom (so called Herxheimer reaction)—a condition particularly dangerous in patients suffering from nervous, renal or cardiac trouble. As this reaction usually occurs after the first injections of arsphenamine, it is recommended that treatment in secondary syphilis be commenced with small doses which may be gradually enlarged. For this reason, some physicians begin treatment in secondary syphilis with a few injections of mercury, previous to the regular arsphenamine course. (Jadassohn[28]).

Tertiary Syphilis

A change of the Wassermann reaction to the negative in tertiary syphilis is not obtained as easily as in the other stages of the disease. In order to reverse the reaction, prolonged treatment is required.

Intensive treatment in tertiary syphilis must be avoided, because there is little chance of securing a rapid cure, while the administration of large doses of arsenicals may cause actual harm since, at this stage, pathologic changes in various organs and tissues are frequent. In this period of the disease, therefore, patients should receive less vigorous treatment than that advised for the primary and secondary periods. Weekly injections of moderate doses of neoarsphenamine (about 0.6 Gm.) for five or six weeks, along with iodides, and followed, perhaps, by iodides and mercury, constitutes in a general way the treatment to be employed—with a later resumption of intravenous treatment according to indications. "The iodides, while not directly spirocheticidal, have an admirable influence in this stage." (Schamberg[2]). Since the Herxheimer reaction may also occur in tertiary syphilis, the first doses of the arsphenamines must be small. In cases of nervous, cardiac or renal syphilis, such a reaction may prove fatal.

To prevent a relapse—particularly possible in visceral or neurosyphilis—it is advisable to continue treatment with mercury long after all clinical symptoms have disappeared; the Wassermann test becomes negative; and the spinal fluid normal. (Lacapère[9]). There is always the danger, in tertiary syphilis, of the Wassermann becoming positive again even while the patient is under treatment.

In all cases, the patient must be treated as well as the disease. In the attempt to destroy the infection, the physician must have due regard for the physical well-being of the patient. Too often, syphilitics in this stage are overtreated and their organs damaged. It is a question, even, if it is wise to extend vigorous treatment to patients over fifty who are not subject to visceral or neurosyphilis.

Neurosyphilis

Advanced neurosyphilis and some of its disastrous forms can be prevented if diagnosed and treated early.

The invasion of the treponemas into the central nervous system in the early stages of syphilis is beginning to be generally recognized. J. Moore[27] had 26.4 percent of neurosyphilis in a series of 352 patients with primary and secondary syphilis. In the tertiary stage of the disease, the percentage went up as high as 35 to 50.

In its early stages, neurosyphilis is mostly asymptomatic. (Of the 94 cases of early neurosyphilis that Moore saw, 72 were asymptomatic.) The complication can be detected only by the routine application of spinal puncture. That is why it is advisable to make a spinal-fluid test in every case of syphilis—even in the primary stage. It is the spinal puncture that affords the only means of recognizing the early involvement of the central nervous system.

As stated above, the Wassermann reaction in the blood may be negative when the spinal fluid is abnormal. Thus, a negative blood Wassermann reaction does not prove that neurosyphilis is absent. Neither is a negative Wassermann reaction in the spinal fluid an indication of the absence of neurosyphilis. The strength of the Wassermann test in the fluid does not run parallel with the virulence of the neural infection—some cases of active neurosyphilis (particularly in tabes and cerebrospinal lues) having a negative reaction. Hazen[28] suggests that a Wassermann test be performed with a larger amount of fluid, e.g., 2 Cc., since the reaction is frequently positive with this quantity and negative with a smaller one.

Examination of the spinal fluid should comprise five tests: (1) the Wassermann reaction; (2) a cell-count; (3) test for the presence of globuline; (4) gold-chloride reaction; (5) spinal-fluid pressure.

Such an examination is recommended before the second course of arsphenamine is instituted. Some physicians perform it after the second course.

There are two main types of neurosyphilis: (1) the exudative form—exemplified chiefly by cerebrospinal lues; (2) the degenerative form—exemplified by tabes and paresis. The former may occur early in the disease and is usually responsive to treatment. The latter

occurs late and is much more resistant to therapeutic measures. In many cases, cerebrospinal syphilis, gummatous infiltrations and allied exudative conditions will respond admirably to repeated intravenous injections of arsphenamine, with the conjoint use of the iodides and mercury. Weekly injections of one of the arsphenamines will usually suffice. The iodides should be given in as large doses as are tolerated by the patient. It has been suggested that the iodides be given before rather than after the meals as has always been the custom. (Hazen.[28])

Where gumma of the brain or damage of some of the vital centers is suspected, it is wise to precede the arsphenamine treatment by a course of iodides and mercurial inunctions or injections, since an initial dose of arsphenamine might provoke a dangerous cerebral Herxheimer reaction. Should treatment commence with arsphenamine, the initial dosage should be small.

Where relief of the exudative type of neurosyphilis is not achieved by such means as have been indicated above, it is justifiable to proceed to the more radical intraspinal treatment.

As to the degenerative forms of neurosyphilis, many cases of locomotor ataxia, particularly early cases, can be symptomatically improved and progression arrested. Such patients can live in comfort for a number of years, much the same as cases in a condition of arrested tuberculosis.

Paresis, on the other hand, is much more difficult to control. Something may be done in early cases, and there is reason to believe that some may be arrested or even greatly improved by intelligent and persevering treatment. For advanced cases, however, very little can be done.

The plan of treatment is the same as that prescribed for the exudative forms of neurosyphilis. Weekly injections of one of the arsphenamines, carried out for a year or longer, have brought much benefit and in some cases even remissions lasting for some years. Of course, such treatment can be pursued only when the arsenicals are well tolerated and the patient's physical well-being is not disturbed. For the most part, however, the associated employment of intraspinal treatments, from time to time, will bring about better results. But, the best time to cure or, rather, prevent paresis is in the preparetic stage, and this stage can often be recognized by careful examination of the spinal fluid before the advent of symptoms.

The positive phases in certain types of curable neurosyphilis may persist for years and require prolonged treatment. It is only in early cases of meningitis and in the more superficial forms of late neurosyphilis, that rapid results are to be expected. Ordinarily, cases of early meningitis will make an apparently complete recovery. As for late meningitis, most cases will do well if no nerve has been injured past recovery. It is probable that 80 percent of early and 50 percent of late tabes can be arrested. Paresis, on the other hand, almost always pursues its own course. (Hazen.)

Spinal Treatment

The antisyphilitic remedies we possess at present (the organic compounds of arsenic, mercury, and bismuth, being colloidal and, therefore, not easily diffusible substances) have great difficulty in making their way into the tissues in general and into the nervous tissue in particular. Although they do reach this tissue in many cases, they penetrate only in very small amounts compared with the amount present in the blood and the rest of the body. The reason for this is evident. The central nervous system is separated from the rest of the body and the choroid plexus probably acts as a barrier, preventing the penetration not only of the drug carried by the blood stream but of the spirochetes as well. (Solomon.[34]) That is why the Wassermann reaction in the spinal fluid may be negative when it is positive in the blood, and why it may remain positive when the blood test becomes negative.

This fact gave rise to the idea that it might be necessary to increase the natural penetration of the drug from the blood stream into the cerebrospinal fluid or introduce a quantity of the drug into the spinal fluid artificially. Intraspinal treatment is opposed by some syphilologists, although the majority of contributors to the literature on neurosyphilis consider it a desirable method of procedure where systemic treatment has failed. It is an indisputable fact that many cases, which failed to respond to intravenous treatment lasting for months and even years, cleared up successfully when subjected to intraspinal treatment. (Fordyce,[30] Solomon.[34]).

Drainage

This method was advocated by Dercum, Gilpin, Earley, etc., in the belief that more arsenic or mercury enters the cerebrospinal fluid if, immediately before or after the administration of these drugs, a spinal puncture is performed and all of the available spinal

fluid drawn off. Spinal fluid is regenerated very quickly and the newly-formed fluid elaborated from the juices of the body, impregnated with arsenic or mercury, will exert a greater therapeutic effect.

Technic of Puncturing.—The use of an anesthetic for puncturing is not essential, although the skin may be frozen with ethyl chloride or a drop of novocaine injected. (Hazen.[28]) The operation itself must be conducted under stringent aseptic precautions. In performing a puncture, the patient is placed in a lateral recumbent position, usually lying on the left side and well bent forward. The method of procedure, as carried out by Hazen, is as follows: "The needle is introduced just below the fourth lumbar spine. This spine, it will be remembered, is on a line with the highest parts of the iliac crests. The puncture is not made in the median line, but about one centimeter to the side and is directed inward and slightly upward." Lacapère, on the other hand, states that it is easier to make the puncture in the median line.

The best needle is at least 12 cm. long; of 19 or 20 gauge and very sharp. According to the description of Hazen,[28] the needle passes through the skin, subcutaneous tissue, spinal muscle, ligamentum flavum and arachnoid. The resistance to the needle begins to cease at a distance of 6 to 8 cm. and the operator "feels" that it is in the subarachnoid space. Then the stilet is withdrawn from the needle and the fluid allowed to escape—6 Cc. of which is poured into a sterile tube for the tests. Removal of this fluid, says Gennerich,[25] should be stopped when the patient begins to complain of strong headache. Otherwise, medullary disturbances and convulsions may occur.

Following this procedure, there is always some peridural leaking which tends to prolong the headache; and at times nausea. Patients should lie flat in bed (without a pillow) for at least 24 to 48 hours, and longer if the headache continues. Lying on the abdomen for some hours after the operation is preferable. Immediately preceding or following the drainage, an intravenous injection of one of the organic arsenicals should be made.

Some syphilologists consider the method of drainage of no effect, or at least of little effect, and prefer instead intraspinal injection of arsphenaminized serum.

Intraspinal Injection

Intraspinal injection of arsphenaminized serum can be made by the method of *Swift-Ellis*[44] first introduced and widely used in this country. This method is as follows: The patient is given an intravenous injection of 0.4 to 0.6 Gm. arsphenamine and, after the lapse of one-half hour, 30 Cc. of blood is drawn off in a glass syringe under thorough aseptic conditions. The blood is centrifuged several times in order to secure a fluid free from corpuscles. Fifteen Cc. of the incubated fluid is injected into the spinal canal after a preliminary withdrawal of an amount of fluid equal to that to be injected. The barrel of a 20-Cc. Luer syringe is connected with the needle by means of a rubber tube about 40 cm. long. The tubing is then allowed to fill with cerebrospinal fluid so that no air will be injected. The serum is then poured into the syringe and allowed to flow slowly into the subarachnoid space by means of gravity. At times it is necessary to insert the plunger of the syringe to inject the last 5 Cc. of the fluid.

This method is used by Fordyce and Hazen with little variation. Hazen describes it as follows: "Exactly 30 minutes after the usual intravenous injection of arsphenamine, 50 Cc. of blood is withdrawn from the vein. This is placed on ice for three or four hours. The blood is centrifuged and the clear serum is pipetted off under aseptic conditions. This serum is inactivating by incubating at 50° C. for one hour, or by being placed in a water bath for the same time at the same temperature. The object of this is, to render inactive any bacteria that may be present in the blood stream. A spinal puncture is done in the usual way. As soon as the stilet is withdrawn from the needle, the percolator is attached to the needle and the serum allowed to flow into this. Ten to 20 Cc. of spinal fluid will usually collect in the tube. About as much of the inactivated blood serum as there is of the spinal fluid should now be poured into the percolator and the two fluids allowed to mix. The percolator should now be raised above the level of the needle and the fluid allowed to flow back by gravity until the original amount withdrawn is replaced."

Ogilvie Method.—Ogilvie[45] has advocated a method which consists of the injection of the plain blood serum of the patient in which there is incorporated a minute amount of arsphenamine (not neoarsphenamine). After the blood has been properly centrifuged and a clear serum obtained, the arsphenamine in alkaline solution is added. "The temperature of the solution and of the serum must be the same. The serum is gently agitated to thoroughly mix the two

and is placed in a thermostat at 56° C. for 30 minutes. From this it is placed in a thermostat at 37° C. for forty-five minutes. It is now ready to be given intraspinally and it should be used as soon after preparation as possible." It is well to begin with 1/5 mg. of arsphenamine and gradually increase it to 1/4 and 1/3 mg.

Some clinicians (Kolmer and others) employ the combined Swift-Ellis and Ogilvie technics—*reenforcing* the serum of an injected individual with arsphenamine. Fordyce, however, is of the opinion that "an addition of 1/4 mg. or more of arsphenamine where a number of injections have to be made will produce in some patients irritative symptoms; while the addition of smaller amounts does not indicate any advantage over the serum obtained after an intravenous injection."

Kolmer advocates the following method: Immediately after the intravenous injection, 25 Cc. of blood is removed from a vein of the opposite arm into a centrifuge tube carrying 4 Cc. of a sterile 10-percent solution of sodium citrate in physiologic sodium-chloride solution. To prevent coagulation, the blood is at once gently mixed with the citrate and immediately centrifuged at high speed for at least twenty minutes. Ten or 12 Cc. of plasma is pipetted and to this amount 0.0003 Gm. (1/3 mg.) of alkalinized arsphenamine added. (Subsequently, this dose may be increased two or three times.) The arsphenaminized serum is then placed in a water-bath at 56° C. for thirty minutes. The spinal puncture is now performed, and, after 30 Cc. of spinal fluid has been removed, the warm, arsphenaminized serum is then slowly injected. The entire operation (from the intravenous to the intraspinal injection) requires about two hours, and herein lies one of the advantages of this method. The time consumed is short. Another advantage, according to the author, is that only 10 to 12 Cc. of serum is injected while 20 to 30 Cc. of cerebrospinal fluid is removed—which "very probably leaves cerebrospinal fluid pressure reduced for some time, producing increased vascularity of the cord and probably also of the brain, with the beneficial effects ascribed alone to spinal drainage." The only disadvantage involved in this method is, that intraspinal treatment might have to be given during a reaction which may have followed the intravenous injection.

Fordyce, however, believes preliminary drainage and reduced pressure unnecessary. He says: "As a result of experience, I have long ceased to drain the fluid preliminary to the introduction of the serum. The latter is introduced under pressure and more fluid is present in the subarachnoid space than normal. My clinical and serologic results have been vastly better since the incidental drainage has been discontinued."

Solomon[34] makes the following interesting suggestion: Since the serum injected into the subarachnoid space does not travel far from the point of introduction, it is desirable to attempt to put the serum as near the point of spirochete activity as possible. Thus, in cases of lumbar tabes and spinal syphilis, it is reasonable to make the introduction into the lower spinal subarachnoid space; in cases of cerebral involvement, the serum should be introduced higher up; and, for a lesion at the base of the brain, the proper route seems to be the cisterna magna. The ventricular route may also be used.

Abroad, it is the practice of some German and French syphilologists to add the arsphenamine directly to the cerebrospinal fluid which is then reinjected into the subarachnoid space. Generich,[35] who advocates this method, removes 60 to 90 Cc. (in women, 45 to 60 Cc.) of fluid, adds 1.35 to 1.5 mg. of neoarsphenamine (for 60 to 70 Cc. of fluid), agitates the mixture gently and immediately reinjects again very slowly. In myelitis and severe cases of tabes, he adds only half a mg. of neoarsphenamine.

This method seems to be more hazardous than that employed by American physicians. At any rate, the amount of added arsphenamine must be in strict proportion to the susceptibility of the patient and the state of the disease, since overdosage may cause spinal irritation and severe reactions.

Intraspinal treatments are usually given at intervals of two weeks. If the interval is of this length, an intravenous injection of one of the arsphenamines may be given in the interim. In mild cases of cerebrospinal syphilis, three to four intraspinal injections may accomplish the desired result; in severe cases, ten to fifteen may be necessary. If there is no improvement after fifteen injections, the method of treatment should be abandoned. (Hazen.[36])

As a result of intraspinal treatment, some reactions may occur. According to Fordyce,[30] such reactions are due to:

1.—Withdrawal of fluid. The after-effect following this operation may come on within a few hours, in the form of headache (frontal, occipital or generalized) and often accom-

panied by vomiting. The symptoms may be delayed until the patient is up.

2.—Treatment. As a result of this, patients may complain of pain in the legs and often of the back. The pains may be slight and transient or severe, lightning-like. They are rare in early cases, but frequent in tabetics and require opiates during the night.

As for the prospects of treatment: The intraspinal therapeutic procedures in neurosyphilis have been attended by considerable success. In this connection, Fordyce says: "I have fortunately been able to control by laboratory and clinical observations a large number of patients from one to four years after intraspinal treatment and found all the phases in the fluid negative with arrest of the pathologic process. In these patients, all other methods of treatment have been previously employed without effect on the fluid-findings and with little influence on the clinical picture. The advocates of intraspinal therapy have endeavored to recognize its limitations and use it only when other methods have failed and when the fluid formula offered clear indications for its employment. The method is enduring the test of time in the hands of clinicians who are familiar with its technic and who are trained in interpreting the findings of the laboratory."

Congenital Syphilis

It is generally agreed now by physicians that the number of active cases of congenital syphilis has been considerably reduced. This is no doubt due to the efficient remedies employed in the treatment of the disease; the intensive treatment accorded to syphilitics in hospitals and clinics; the efficient prophylactic measures employed in maternity hospitals; the systematic application of the Wassermann test to uncover cases of unsuspected infection; and the proper treatment given during pregnancy. All these precautions make it possible, often, for a healthy child to be born of syphilitic parents.

In order to determine whether the child must be treated for congenital syphilis, in addition to the clinical manifestations of the disease, the Wassermann test must be taken for a long time, since a negative test at the time of delivery or shortly thereafter is no indication that infection of the child has not taken place. Routine tests should be taken frequently and the child kept under observation for two or three years. If, at the end of this period, the blood Wassermann test has been found negative and the spinal fluid normal, the probability is that the child has escaped infection.

To prevent congenital syphilis, it is of paramount importance to start treating the mother early and continue treatment throughout pregnancy. If intravenous injections of arsphenamine or neoarsphenamine are not well tolerated, due to complications, such as toxemia, reactions or extreme intolerance of arsenical treatment, newer remedies should be employed, such as sulpharsphenamine or bismuth intramuscularly.

For nursing babies with congenital syphilis, it has been recommended to give the mother intravenous injections of neoarsphenamine and have the child receive the drug through the maternal milk. At the same time, small mercurial inunctions, say 10 grains (0.6 Gm.) of a 50-percent mercurial ointment may be employed.

Infants who are not nursing may be treated with intravenous injections of neoarsphenamine (50 to 75 mgs. for each 10 pounds of weight) injected into the temporal veins if these are large enough. Where this cannot be done, intragluteal injections of neoarsphenamine have been suggested. For this purpose, 100 mgs. (0.1 Gm.) may be given in 2 Cc. of sterile distilled water into the two buttocks (alternatingly), once a week, in courses of six injections followed by mercurial inunctions.

For older children, neoarsphenamine is recommended to be injected in the veins of the arms in much the same manner as in adults. One decigram (0.1 Gm.) may be given for each fifteen pounds of weight. The syrup of the iodide of iron is a most useful drug in these cases and, if well borne, may be used over periods of months. (Schamberg.)

Fordyce and Rosen[81 82] believe that the best method of treating congenital syphilis consists of intramuscular injections of neoarsphenamine and mercuric chloride. Their plan—suggested some years ago and adopted by many syphilologists—is as follows:

A course of neoarsphenamine treatment consists of from six to eight injections at weekly intervals. For infants from two to twelve weeks old, the initial dose is 0.1 Gm.; from three to nine months, 0.15 Gm.; from one to two years, 0.2 Gm.; and for children of three years, 0.25 to 0.3 Gm. The course of mercuric-chloride treatment consists of ten to twelve injections at weekly intervals, with a dosage as follows: 1/10 grain for children from two weeks to six months old; 1/8 grain from six months to one year; 1/7 grain from one to two years; 1/5 grain from two to three years; and 1/4 grain for all those above

three years. Two such full courses are recommended regardless of a negative Wassermann reaction, and possibly even a third course of mercury. In very feeble infants, it is better to initiate treatment with mercury—giving about eight injections before beginning the administration of arsphenamine. They state that they observed no abscesses, even in undernourished infants with a poorly developed musculature, and no reactions from the drug, except an occasional trace of albumin after the mercury. In an article of recent date these authors[32] write:

"We have now given several thousand injections of neoarsphenamine and mercury intramuscularly, with the development in only three or four instances of small abscesses, which healed rapidly after incision and evacuation of the pus from the broken-down tissue. Whenever this occurs, we feel that there has been some error in the technic on the part of the operator or that the preparations used were faulty.

"In carrying out the treatment, it is important to watch the weight and development of the child, the digestive and excretory organs and to increase, decrease or interrupt the treatment as indications arise."

Of course, the treatment must be individualized and the dosage diminished or the intervals lengthened if indications arise. "The urine should be examined at frequent intervals, as occasionally a trace of albumin is found, but this quickly subsides when the drug is discontinued."

In a private communication, the authors were informed of a method (tried out in a large clinic) for the treatment of infants, with the aid of intramuscular injections of *sulpharsphenamine*. A series of such injections is to be given to a baby, six to ten pounds in weight, in doses of ½, ¾, 1, 1½, 2, 2½, 3 centigrams, twice a week, beginning with the smallest dose and ascending to the largest. When the largest dose is reached, it should be administered once a week for a period of six weeks. This course is to be followed by an interval of four to six weeks of rest, when a course of potassium bismuth-tartrate may be instituted in a series of twenty to thirty intramuscular injections (20 mgs.—1/5 ampule of 100 mgs. each). These two series of treatments—the sulpharsphenamine and potassium bismuth tartrate—constitute a full course. After that, ten to fifteen mercurial inunctions per month may be given for several years.

Another suggestion, received in a private communication, reads as follows: A child of seven months may receive 100 mgs., or one decigram, of sulpharsphenamine to be injected into the muscles of the buttocks once a week for a period of six or seven weeks. This might then advantageously be followed by a course of mercurial rubbings, which in turn is to be followed by a resumption of arsenical treatment at a later period, 100 mgs. of sulpharsphenamine may be dissolved in 1 Cc. of water.

Of late, intramuscular injections of *bismuth* have been successfully employed in the treatment of children. The drug is particularly adapted because of its comparative lack of toxic symptoms. If a good preparation is selected, the chance of reaction is negligible and the therapeutic results are very good. This new remedy is being tried out more and more, with the consensus of opinion in favor of it. The dose is proportionately somewhat larger than for adults; but the weight and age of the child must be considered in the calculation of the dosage.

The preference of the intravenous route for arsphenamine injections and the difficulty of using this route in young infants has suggested the idea of injection through the superior longitudinal sinus. This method was especially recommended in taking blood for Wassermann tests, since it makes the process possible even in new-born children.* But of the nearly two thousand sinus puncture cases made till now, the number of performed intrasinous arsenical injections is very small.

This method, however, demands great skill on the part of the physician, since a faulty technic may easily prove fatal.

In order to detect the involvement of the central nervous system, an examination of the spinal fluid is desirable; but obtaining it is a difficult matter in children. Apropos of a lumbar puncture in children, Fordyce and Rosen[33] write: "Lumbar puncture in the very young is an easy procedure technically, but bloody fluids are so frequent that it often necessitates renewed attempts on different occasions before a clear spinal fluid is obtained. Greater success is met with in children over one year."

As to the prognosis of treatment of congenital syphilis, these same writers declare that "the asymptomatic cases offer fewest difficulties in treatment. The majority of patients with active syphilis with the usual early manifestations respond quickly to intramuscular treatment instituted shortly after birth. The clinical symptoms disappear, a steady gain in weight takes place and, within a few weeks,

* See Gordon[36] and Solomon[37] on puncture, Fisher[38] and Schönfeld[39] on intrasinous treatment.

the infant's appearance has undergone such a change that it is often unrecognizable. In infants who are not seen until clinical symptoms develop in the third to the sixth month, treatment is usually successful unless there is severe visceral involvement, a rapid decline in weight, and gastrointestinal symptoms which interfere with feeding."

Arsphenamine-Fast Cases and Bismuth Therapy

From time to time, patients present themselves with a strongly-positive Wassermann reaction which does not appear to be influenced by the ordinary treatment employed. Many such patients suffer from latent syphilis, especially neurosyphilis and aortitis. There are some, however, who are asymptomatic and in whom nevertheless the Wassermann reaction seems to remain uninfluenced. Such "Wassermann-fast" cases represent a puzzling element in the treatment of syphilis, particularly when all other manifestations of infection have ceased to appear and considerable antisyphilitic treatment has been given. One explanation of arsphenamine-fast syphilis is, that prolonged treatment with small doses of the arsenical causes the microorganisms to become resistant to the drug. Jadassohn[41] even goes so far as to say that the spirochetes may become resistant in one patient and, when transmitted to another, cause an arsphenamine-fast infection. On this subject, Kolle[42] stated that, thus far, it was impossible to produce, experimentally, an arsphenamine-resistant strain of spirochetes, although he had kept many of the organisms under the influence of arsphenamine for a long period of time (one year). One cannot be sure, therefore, that arsphenamine-fast cases of syphilis are produced by arsphenamine-fast strains of the microorganisms. Theoretically, on the other hand, it is possible, under special conditions, for such a strain to occur, since it has been possible to produce arsphenamine-fast trypanosomes.

In the opinion of Kolle, cases of arsphenamine resistance may be the result of changes in the human body—changes brought about by syphilis itself. Jadassohn[42] suggested that, in tertiary syphilis, the small content of spirochetes, on the one hand, and the virulent increase of the products of the disease, on the other, can be explained only in terms of specific changes in the body. Such changes are characteristic of the late stage of syphilis. They may also occur in the early stages, as a result of which the syphilitically infected body may no longer be capable of reworking the drug so as to afford its maximum power. The cooperation of the body is under all circumstances essential in the action of arphenamine. Likewise, the importance of the ictus immunicatorius (already emphasized by Ehrlich) should at all times be taken into account.

Galewsky and Pinkus[43] are of the opinion that there are no such things as absolute arsphenamine-fast cases. According to them, all cases of arsphenamine resistance are of a temporary and relative nature.

The blame for arsphenamine resistance is often attributed to the inefficiency of the organic arsenicals in general or of a certain derivative in particular. Thus, neoarsphenamine has been pronounced by some as the cause of more cases of persistent positive Wassermann than arsphenamine. Frequently, it is a certain brand of neoarsphenamine that is held responsible. However this may be, it is indubitable that, in Wassermann-fast cases, the drug itself may be occasionally at fault. It is therefore justifiable to replace the particular arsphenamine derivative employed by the parent-compound itself or change the brand or lot. Such a procedure, however, rarely helps. Of far greater importance is an increased intensity of treatment.

Some cases may prove particularly resistant to the arsenicals and be more amenable to other drugs, as mercury and bismuth. Some physicians have found mercury more or less generally efficient in reducing the Wassermann to the negative. Recently, Conrad and McCann[44] suggested intravenous injections of mercuric chloride for Wassermann-fast cases. In 40 out of 62 such cases, this remedy succeeded in reducing the Wassermann to the negative. In other cases, there was an improvement in the clinical symptoms. The authors give a detailed description of their method of injection, which is as follows:

"The mercury is drawn into the syringe, a tourniquet applied above the elbow, the needle is carefully introduced and from 8 to 10 Cc. of blood withdrawn. The tourniquet is now removed and about half of this amount is injected. Blood is then withdrawn again up to 8 Cc. and the full amount slowly injected. All patients were started on 10 minims (0.6 Cc.) of 1-percent solution of mercuric chloride in physiologic sodium-chloride solution. This dosage was increased by two minims (0.1 Cc.) at each treatment, until the patients were receiving 2 Cc. at a dose. The injections were given twice a week."

Bismuth and its organic combinations have attracted, of late, much attention as being very useful in the treatment of "Wassermann-fast" cases. Some excellent results were obtained where the arsphenamines had failed.

This is particularly true in the tertiary stage. Bismuth should, therefore, be tried in resistant cases, in two or more courses comprising ten to twenty injections of 0.1-Gm. doses, with proper intervals of rest.

The curative properties of bismuth in protozoon infections were first brought to the attention of the medical profession, in 1916, by Robert and Sutton[46], who discovered that bismuth possesses a distinct trypanocidal effect. It is, however, to the credit of Sazerac and Levaditi[47] that bismuth was pronounced an efficient spirocheticidal substance.

The course of treatment generally consists in the administration of 0.1 Gm. every three to seven days until about twelve injections have been given, 0.2-Gm. doses are also employed. The maximum total administration should not exceed three Grams. A rest period of one to two months is then instituted and the course repeated.

The product is injected into the gluteal region in such a manner as to deposit the drug in the muscles and not in the fat overlying them. Not only will a drug deposited in the fat be slower to absorb, but it is more apt to produce pain and abscesses. A long needle, about 2 inches (18 to 19 gauge) may be employed, depending on the corpulence of the patient. If care and skill are exercised, the injections with this product are practically painless and indurations and abscesses rarely observed. Reactions following bismuth therapy occur, but not as frequently as is the case with arsenicals. A gingival blue line, stomatitis, chills, fever and, on rare occasions, cutaneous eruptions are the manifestations of the toxicity of bismuth. When indications of stomatitis are very pronounced or loss of weight is observed, the treatment must be discontinued until the cessation of the toxic symptoms. The experimental work on rabbit-syphilis and the already numerous observations on the beneficial effects of potassium bismuth tartrate in human syphilis, clearly indicate that it is a powerful spirocheticidal substance. Many very favorable reports have appeared in the medical literature and the majority of syphilologists agree that it is an important remedy in syphilis, particularly in its latent stages. It is claimed by those who have been employing bismuth that the compound is more effective than mercury, not only in its favorable influence on the clinical manifestations of the disease but also in securing a negative Wassermann reaction.

Of late, bismuth has been advocated as a remedy to be used conjointly with mercury in the treatment of all stages of syphilis. Arsphenamine and its derivatives are to be used as a basis and bismuth, reenforced by mercury, for alternating courses. To avoid superimposition of possible toxic effects, proper intervals of rest between courses must be maintained. Particular attention must be paid to the proper functioning of the kidneys, which are under greater strain when all three antisyphilitic drugs are used.

In the discussion on arsphenamine-fast cases at the Thirteenth Congress of the German Dermatological Society, held in Munich in 1923[48], some syphilologists suggested that the arsenical drug be changed temporarily for a nonarsenical drug, in the hope that, following the change, the reapplication of arsphenamine might prove more successful. Thus, Galewsky recommended the interruption, for a time, of the arsenical and mercury treatments in order to give the patient a chance to eliminate the medicaments, in the meantime treating the patient with iodine only. Upon return to the former mode of treatment, the arsphenamines act with greater efficiency. For the same purpose, Nast[49] recommended bismuth.

In three cases of arsphenamine-fast syphilis, Müller[49] administered luetin, after which, arsphenamine, in large doses, yielded the desired effect. He points out that, in Wassermann-fast cases, the organism is noted for its display of a normal biologic reaction upon spirochetes, and that this vaccine-therapy with luetin gives the organism the ability for such a normal reaction. He believes his conclusions to be confirmed by the fact, that, when the Wassermann reaction is negative in the presence of clinical manifestations, the luetin turns it positive.

When neither the intensive treatment with organic arsenicals nor the use of various therapeutic agents have availed in the improvement of the Wassermann, it is an indication of one of two things: either the Wassermann test in the case in question is no exact expression of the intensity of the disease, or the spirochetes are intrenched in a part of the body where they cannot be reached by antisyphilitic remedies. In such cases, there is no alternative but to discontinue treatment for a while and then make another attempt later on, in the hope that the spirochetes had undergone a biological change in the meantime, becoming more susceptible to the destructive effect of the chemical compounds.

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On Internal Camphor Therapy

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UP to a few years ago, camphor therapy was limited almost exclusively to the injection of camphorated oil or of camphor ether in more or less threatening symptoms of cardiac insufficiency. Incidentally, the stimulating action of camphor was made use of externally in the form of spirits of camphor and of ointments. In recent years, it has become possible to employ camphor internally and thus to introduce a more extensive utilization of the spasmolytic camphor action which, at the same time, may be employed for the purpose of non-specific stimulation. The action of camphorated oil frequently fails to occur because the absorption from the subcutaneous cellular tissue takes place so very slowly.

In this, as in numerous similar difficulties with respect to the absorption of pharmaceutical substances, which are soluble in water only with difficulty, the fundamental researches of H. Wieland have opened a way.

Wieland showed that the addition-ability which is peculiar to the desoxycholic acid (a bile acid that is constant in human bile) makes it possible to render even substances of slight solubility subject to absorption. In this way, there develops the socalled choleinic acids which are insoluble in water and in acids but which dissolve completely in the alkaline intestinal secretion and are promptly and readily absorbed.

The action of camphor upon the body is found to be stimulating, spasmolytic and adsorbent for poisons. This superficial action of camphor makes possible the removal of toxic substances; for instance, those present in consequence of excessive digitalization, in chronic intoxication of intestinal origin through exotoxins of putrefaction bacteria, of fatigue toxins, and so on. The stimulating action of camphor seems to be exerted especially on the central nervous system, particularly the centers of the vascular and respiratory nerves.

For the internal administration of camphor, in the form of addition-combinations with desoxycholic acid, those conditions of myocardial weakness are mainly of interest that show a chronic course. For, in case of acute danger, one is much more apt to resort to injection rather than to internal remedies with their slow action. If the chronic cardiac insufficiency is complicated with spastic contractions of the lumen of the coronary arteries, efficient results are obtained with such cardiants in which a clearly relaxing effect upon the smooth muscular fibers is observed.

This spasmolytic action, which is a prominent characteristic of camphor, has recently been utilized in various disease-conditions in which there is a question of acute or chronic contraction of the smooth muscular fibers. This particular effect can be increased if papaverine is combined with the camphor, as has been done with success in the "perichol" tablets.

So far, but slight attention has been devoted to the non-specific stimulating action which is peculiar to camphor. In our opinion, this is an important component of the total camphor action, which should not be underestimated. We may employ it in all those disease-states, mainly chronic, in which the presence of subacute inflammatory changes in myocardium or pericardium is assumed that manifest themselves only influencing the general well-being of the patient. It is not necessary that intensive stimulation be produced. We know from the carefully studied processes after the introduction of non-specific protein stimulants that, in chronic inflammations, small and

smallest stimuli suffice to produce an optimal effect, when the healthy tissue barely reacts even to large doses which are close to the border of toxicity. This stimulating effect in the sense of a non-specific increase in function is, according to our experience, decidedly more marked after the oral administration of camphor than after injections. It is possible that the combination with the bile acid increases the non-specific component.

Because of the fundamental characteristics of camphor, which have been described, the best results will be seen in those forms of heart weakness which appear in the course of an infectious disease, such as every practitioner has seen frequently in the course of the recent "flu" epidemics. If there is a heart weakness appearing in the course of a severe arteriosclerosis, especially of coronary sclerosis, it is important, of course, to add to those remedies, that influence the activity of the heart muscle, others that act upon the arteriosclerotic process itself. Among these, the numerous preparations of non-specific protein therapy are of particular importance. In slight coronary disease with arteriosclerotic basis, a combined non-specific stimulation, by injection, together with the internal administration of a camphor preparation that is readily absorbed will give the best results. This combined therapy is, aside from injection of non-specific stimulants, feasible also with iodine or with those non-specific stimulants that may be applied orally; and these latter have been employed with marked success on several occasions.

A further series of maladies which have not yet been observed sufficiently are the spastic contraction-states of the smooth intestinal musculature.

Especially in spastic stenosis of the pylorus, we have seen notable improvement following protracted administration of camphor. In the spastic occlusion of the bile ducts, which are not very rare and which frequently have given occasion to needless operations, we have quite recently observed markedly favorable results in several instances.

Some time ago, Groedel called attention to the favorable experiences that he had with internal-camphor treatment in cases of Basedow's disease and which are paralleled by our own observations. In combination with minute doses of iodine, striking improvements in the thyreotoxic manifestations have been observed in a degree which hardly is duplicated, otherwise, with the same rapidity and the same permanency. It is to be noted that, here, it is a question of the internal administration of minute doses of iodine. A triple combination is possible in this disease, namely, iodine, camphor and a protein-body which is injected parenterally. It is remarkable how the tachycardia disappears and the nervous restlessness is allayed. The stimulating action upon the cerebrum is marked. This fact has been utilized practically by Pototzky who influenced the deep sleep in enuresis nocturna by the oral administration of camphor in such a manner that the bed-wetting ceased after a short time.

It must be considered, of course, that, possibly, a suggestive influence was active, and it is advisable in any case to study, on a considerable clinical material, the possibility of influencing the profoundness of sleep.

It goes without saying that camphor may not be administered continuously without controlling its effect. Like every other stimulant, the effect diminishes in course of time. But, unpleasant symptoms of cumulation have been observed also, after chronic camphor therapy. Still, the danger of overdosing is not as great as in the case of protein substances that are injected intravenously. As soon as the optimal effect has been attained, it is well to diminish the dose markedly, but never to omit it abruptly. For, the absence of the stimulation, to which the body has adapted itself for some time, produces symptoms of withdrawal even after internal administration of camphor, as they are known ordinarily only in case of withdrawal of morphine. These withdrawal symptoms are renewed promptly by means of caffeine.

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The Cancer Problem

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THE cancer cell is a cell which has the power of living at the expense of normal tissues. That is, the ferments of the cancer cell can hydrolyze living protoplasm, breaking it down into simpler products that it can build up into its own structure and so enable it to survive and reproduce itself. It is a cell which is outside the controlling synchronization of the nervous system of its host, either not having any organic connection with nerves or being incapable of response to nervous stimulus. The cancer cells divide by mitosis, but the number of chromosomes is irregular.

We have to inquire into the mechanism by which the cancer cell can accomplish this parasitic mode of life. Are there any normal cells of the body that live in the same way, that is, are capable by their ferments of digesting living protoplasm? We are struck by the fact that the cells of the chorionic villi do; that they hydrolyze the protoplasm of the cells of the uterine wall, hydrolyzing not only the cells of the mucous membrane but also the cells of the blood vessels, producing hemorrhages round themselves, so that they are bathed in blood; which tissue they can also no doubt use as food as well as the food material in it.

How is it that quite normal cells can behave in this way? They and cancer cells having this capacity in common differ profoundly from the method of life of all other cells of the body. We have to inquire in what way. In order to make my argument clear to those who are not familiar with the latest knowledge about tissue metabolism and certain biological problems, it is necessary for me to go into some detail.

All normal cells of the body, except the chorionic cells, nourish themselves from food material brought to them by the tissue fluids from the blood or from the blood direct by the same method. Carbohydrates come to them in the form of dextrorotatory glucose, fats in the form of fatty acids and proteins in the form of amino-acids, probably. When glucose and fats are in greater quantity than is necessary for immediate use, the carbohydrate is stored as glycogen, the fatty acids as neutral fat. There is no storage of nitrogen, the small amount necessary for keeping the cell-machine in repair being used while the rest is de-aminized, the ammonia part being converted into urea, the carbohydrate fraction being used as food or stored. One would think that these simple food materials presented to the cells could be used quite readily by the very powerful intracellular ferments possessed by the cells; the ferments should be capable of dealing with the ordinary food material. They are not any more than the phagocytic cells are capable, without assistance, of digesting a pathogenic microbe or the cells of the uterine mucous membrane of the uterus finally resisting and overcoming the cells of the chorionic villi.

We know that, if the cell-islet tissue of the pancreas is removed or destroyed by disease, the whole tissue metabolism breaks down and the patient dies. His tissue cells are incapable of forming store-material of carbohydrates and fats and incapable of keeping in repair the protoplasmic cell-structure. The diabetic, with his cell-islet tissue reduced by disease, has also a much reduced capacity for making antibodies for the digestion of such foreign protein as microbes. The victim of chorion epithelioma has been incapable of producing specific antibodies to the proteins of the cells of the chorionic villi.

The internal secretions of the pancreas, which are necessary for the metabolism of carbohydrates, fats and proteins by the tissues, are destroyed by boiling but survive a temperature of 56—80° C. They are heat-stable. The cell ferments, on the other hand, are destroyed by heating to 56° C., that is to say, they are heat-labile. Acting together, they are capable of metabolizing the proteins, carbohydrates and fats presented to the tissue cells, either breaking them down or building them up by reverse action. For any foreign protein or other food material, given any way but by the intestinal tract (for the ferments of the intestinal tract break down all food material into a uniform protein) specific antibodies are formed by the cell-islets. If you inject a dog with a solution of cane sugar under his skin, at first it is excreted unchanged by the kidneys; rapidly, however, specific coferment is formed which enables the cell ferment to break it down into glucose and the excretion of cane sugar ceases. So, too, if the antigen is a suspension of microbes, a specific antibody is made for its digestion. Such antibodies for microbes have been called by various names — immune-body, amboceptor, *substance sensibilisatrice*, etc., while the physi-

ologists call the homologous substances "co-ferments." I have suggested *adapter* as a generic name for all those things; so that one might speak of protein adapter or protease adapter, amylase adapter, lipase adapter. The reason for this name will appear later. The antibodies adapt the cell-ferments to the substrate. The patented name, "insulin," is about as accurately descriptive as the name "vaccine" for microbial antigens. What a pity, by the way, that Wright and Douglas didn't patent vaccines to prevent incompetent people from making them.

We have to remember, too, that certain other factors are necessary for the successful metabolism of food material and for every other vital activity. There must be present a sufficient concentration of lime-salts, for instance, and there must be an optimum reaction, a particular relation between the amount of H and OH-ions. A slightly increased concentration of H-ions profoundly alters the whole metabolism.

For tissue metabolism to be successful, there must then be adapters produced by the cell-islets, and the medium in which the ferments act must have certain salts in it and be of an optimum reaction. In order to understand why it is that such adapters are necessary to enable the cell ferments to act, we must delve still further into the depths of biochemistry.

Pasteur first discovered that there are certain compounds of carbon, which, while identical in every other respect—having the same chemical formulæ and the same chemical reactions—differ only in their behavior to polarized light; that is, one compound rotated the light to the right, the other to the left. Such compounds have the same specific gravity, molecular volume, melting point, solubility, heat of solution, of combustion and of neutralization. They have the same amount of chemical affinity and index of refraction. Their absorption spectra are the same and they have the same chemical action on inactive bodies. But, one body rotates the light to the right as much as the other to the left. Pasteur's discovery was made with ammonium tartrates, and he found that, if the common mould penicillium glaucum was made to grow in a solution of both (ammonium racemate), it lived on the dextro-isomer, but left the levo-isomer quite untouched, as he thought, but, as now appears, it is broken up to a small extent. Many other fungi have been found which will attack one isomer and leave the other practically untouched, and the method is used for obtaining one active isomer from a solution of two, which may either be a mechanical mixture or the two isomers may be chemically united to form what is known as a racemic compound. Such a compound does not affect polarized light, since the two rotations neutralize one another. This biochemical method is now largely replaced by other methods of separation, as it has the disadvantage of being slow, it being necessary to use dilute solutions, and other ammonium salts and phosphates must be added, in order that the fungus may live; but it interests us, as this splitting up is done by an intracellular ferment of the cell, and these ferments are specific in their action. A ferment that attacks one substance will not attack another, however closely allied. For instance, a ferment that attacks glucose will not attack mannose, and a ferment that will attack d-glucose will not attack l-glucose; and so on. Now, l-glucose is identical in every way with d-glucose, except that one turns polarized light to the right, and the other turns it to the left, and it is found that this property must be due to the arrangement of the elements of the molecule of the compound in space. It is, further, found, by the compounds formed by replacement, etc., that the one is what is known as the "looking-glass image" of the other, so that, if one wanted to know the appearance of the isomer (stereo-isomer) of the molecule of a certain compound, one would get it by looking at its image in a plain mirror. For instance, d-glucose and l-glucose are depicted on a plain surface by the following structural formulæ:

COH	COH
H·C·OH	HO·C·H
HO·C·H d-glucose	H·C·OH l-glucose
H·C·OH	HO·C·H
H·C·OH	HO·C·H
CH_2OH	CH_2OH

Now, the d-glucose, or dextrose, is fermentable by various ferments of the adult animal and vegetable organisms, while the l-glucose is not, and so with the other fermentable sugars; mannose, galactose, fructose, their d-isomers can be utilized as foods, their l-isomers cannot, so that we live on those proteins which rotate polarized light to the left. For instance, trypsin will hydrolize compounds of l-leucine with amino-proprionic acid, while the compound formed by d-leucine remains intact. It is inferred then that ferments have a special stereo- or space-structure which enables them to fit into the stereo- or space-structure of the substance on which they act, so that plants and animals in their dominant

forms can only live on dextro-sugars and levo-proteins.

Now, the dominant form of the vertebrate world is the sexual generation, while the dominant form of phanerogams is the asexual generation or sporophyte generation. But, it is a matter of common knowledge that, in these higher plants (as there is throughout the vegetable world), an alternation of generations occurs. In the lower orders of vegetable life, the sexual, or gametophyte, generation is the obvious form, the asexual, or sporophyte, generation arising on it, e.g. the mosses and liverworts. As we get higher in the vegetable scale, the gametophyte generation becomes more and more insignificant, until in the phanerogams it takes place within the spore-forming organs of the plant. The spores develop, forming male or female plants which produce ova and spermatozoa; the ovum is fertilized and develops into a miniature plant or seed, which develops into the adult sporophyte under suitable circumstances. Likewise, in the animal world, in the invertebrates the alternation of generations is well marked and obvious. For instance, take the case of the coelenterata, or jelly-fish, tribe, there is a well-marked alternation of generations in the hydrozoa, the asexual generation being the most well-marked and consisting, as a rule, of a number of polyps united by hollow stalks into a branching colony. Certain cells (spores) on these polypi develop into medusa or umbrella forms, which are free, develop ovaries or testes, the egg is fertilized when ripe, and the oösperm develops and forms the branching asexual colony; and so right up through the invertebrate kingdom.

It was supposed, and is still generally supposed, that, in the case of the vertebrata, development is direct—as opposed to the antithetic alternation of generations, just described. The discovery by Beard, that in the development of the dog-fish there appeared a transitory nervous system before there was any sign of an unfolding embryo, threw a flood of light on the matter, and there is no doubt in my mind that the alternation of a sexual with an asexual generation is the universal rule throughout the metazoa and metaphyta. According to Beard, when the egg of a vertebrate (e.g., man) is fertilized, the oösperm divides and subdivides forming a hollow sphere—the blastodermic vesicle, which eventually consists of three layers of cells, ectoderm, mesoderm and entoderm. About the tenth division of the oösperm, one cell appears which is different from the rest (having large yolk plates in it which stain in a special way). This is known as the *primitive germ cell,* and this divides and subdivides, until 128,256 or more cells (according to species) are found which are known as the *primary germ cells.* One of these divides to form the embryo; the other primary germ cells migrate into the embryo when it is formed and, after undergoing further division and reduction of chromatic substance, become the ova and spermatozoa.

The blastodermic vesicle develops, forming the chorion which sends out processes—the chorionic villi—whose cells bore their way into the uterine tissues, living at their expense. The chorion also forms folds over the embryo, which unite to form the amnion. All these are part of the asexual generation, phorozoon, which absorbs its nourishment from the hydrolyzed maternal tissues, while the embryo gets its nourishment at the expense of the phorozoon. As the embryo develops and its organs become functional, the phorozoon begins to degenerate, the chorionic villi disappearing, and it ceases to feed itself and retains a mere mechanical function as a covering to the embryo. Coincident with the development of the embryo, the allantois grows out from the hindgut of the embryo and carries blood-vessels in its mesoblastic covering. This becomes applied to the chorion, where it is attached to the uterine wall, and the mesoblast carries these vessels into the villi where they project into the decidua serotina where they dip into the loculi, or cotyledons, filled with maternal blood, which develop at this site and form the placenta.

At the time the placenta becomes functional, all the fetal organs are laid down. This is the *critical period,* and it is at this time that the fetus is born in marsupials, is put into the pouch, becomes attached to the teat of the mother, which squirts milk into its mouth. The formation of the placenta enables a longer intrauterine gestation. At the *critical period,* a profound change gradually takes place in the nutrition of the fetus. Up to this time, it has been living on products of the cells of the chorionic villi, which in turn have been living on the maternal cells and turning the protein and carbohydrates of them into the opposite isomeric compounds, that is, turning the dextro-sugars and levo-proteins into levo-sugars and dextro-proteins, and it is these latter that the embryo has been living on. But, with the development of the placenta, and in the case of marsupials at their birth, the embryo has to live on dextro-sugars and levo-

proteins—the placental embryo from the maternal blood, the marsupial from the maternal milk.

Of course, the chorionic cells have absorbed their nourishment from the maternal decidual cells by means of their intracellular ferments, and so, too, the cells of the embryo. But, after the critical period, the fetal cells have, by means of their ferments, to live on carbon and nitrogen compounds of a stereochemical structure, the exact opposite (or looking-glass image) of the ones they have been living on. How is this done? Beard suggests that it is brought about by the pancreas by means of its ferments, by which he meant the external secretions. But, with fuller knowledge, we see that it is the internally-secreted coferments that enable the change to take place and *adapt* the cellular ferments of the fetal cells to the stereochemical structure of the carbon and nitrogen compounds on which they must live. It is for this reason that I have suggested the term "adapters" for a generic name for all the different coferments produced by the pancreas.

It will be noticed that the carbon and nitrogen compounds of the asexual generation of plants correspond with those of the sexual generation of animals, and so it is presumed that those of the sexual generation of plants correspond with those of the asexual larva, or phorozoon, of animals. For the sake of clearness, the change of method of nutrition of the fetus has been described as clear cut. This is, of course, not the case, the change being a gradual one, the fetal pancreas-placenta combination becoming gradually more effective from small beginnings.

I have advanced the hypothesis that, in diabetes, the cells of the body, owing to the absence, through disease, of the pancreas adapters, are thrown back into the condition of pre-placental days and are dependent on the food which they were getting then. As they cannot get it, they starve and, their metabolism going on without food, they waste.

It would be interesting to inquire whether such a sexual generation as that of liverworts would supply food to diabetics which could be metabolized by the tissue ferments alone.

Beard's theory of cancer is, that it is of the nature of a phorozoon. The cells of the chorionic villi are outside of the nervous control of the maternal nervous system and are, presumably, cells that prepare their food from the uterine cells without the aid of adapters. Cancer cells are quite clearly outside the control of the nervous system and act exactly like the chorionic cells on the tissues they are invading. They also must be able to nourish themselves without the aid of adapters. Not only do the chorionic cells attack the uterine tissues, but have been found in distant parts of the body. If the cell-islets of the mother fail to make specific adapters for their digestion, the chorionic cells continue to grow and a chorionic epithelioma results.

The cancer cell then is a cell outside of the control of the nervous system that can nourish itself without the aid of adapters being able to hydrolyze the tissues in its vicinity and also to use such food material as glucose in the blood without that food material being sensitized.

We have now to inquire how such a cell could arise from perfectly well-behaved cells properly controlled by the nervous system and only able to metabolize sensitized, or "adapted," food material.

All the functions of the body are performed by a single-celled individual, such as an ameba. Multicellular animals arise from a single cell which also has such a capacity. In a multicellular individual, different cells are modified to perform different functions, but ancestrally they have the function of reproduction and, as a cell becomes more primitive losing the specialized structure that enabled it to carry out its duties in the multicellular economy, it becomes an abnormal germ cell which, under the influence of some stimulus, starts to reproduce a new asexual individual. Further, since the necessary stimulus is constantly present, or in experiments artificially applied, or a malignant tumor transferred, it is only in some individuals that a malignant tumor will arise or develop, if tumor tissue is transferred. This can only be because the environment is suitable. We must, therefore, inquire, (1), what the nature of the stimulus is, and, (2), what the change of environment is which, when the stimulus is present, enables the stimulated cell or cells to develop. The stimulus obviously must be submaximal; if it is maximal, the cell is destroyed.

Under natural conditions, we know that various submaximal stimuli produce such a tumor as an epithelioma, e.g., the long-continued irritation of a clay-pipe, soot-cancer, paraffin cancer, cancer produced by repeated painting with tar which not only injures the cells on which it is painted but also by absorption profoundly affects the whole body of the animal, x-ray and radium cancer, which latter are especially significant at the present

time. But, in the vast majority of cases, such stimuli are not present, cancer of the tongue, stomach, colon, uterus or breast are not produced by such stimuli. What is the chronic injury that causes such tumors? I believe, in nearly every such case it is caused by a chronic infection by microbes which are non-pyogenic. Even when such tumors are not ulcerating, I believe I am right in stating that microbes have been constantly isolated from them. In cancer arising on chronic ulcers, as of the tongue or stomach or cervix, there can be no question at all that microbial irritation is the cause of the tumor starting. Several people have suggested that cancer is caused by intracellular parasites; that the injury to the nucleus is caused in this way. This is quite likely, and it must not be forgotten that the splitta- or infective-granule stage of microbial life may be responsible in many cases. The Leytons have isolated from the porcelain-filtered press-juice from sarcomata a streptothrix which, inoculated into rats, produced sarcoma. But I do not believe that there is any necessity to suppose the presence of a specific cancer microbe any more than there is a specific microbe for the production of, say, nephritis. When discussing therapy, I will relate some cases which will tend to reinforce this view.

Now, such localized infections are constantly present in great numbers of individuals of the cancer age; and yet no cancer occurs. The reason for this can only be that the mechanism for dealing with the injured cells is efficient and that the environment is unsuitable. Normally, such effete cells, as used-up red corpuscles, are phagocyted and hydrolyzed (digested) by macrophages, very large phagocytic cells, in the spleen and possibly elsewhere; other such cells are dealt with by other macrophages. Goldman, by means of intravital staining in white mice, showed that there were very large macrophages which took up such an intravital stain as toluidin-blue. These had their home, in his opinion, in the *taches laiteuses* in the omentum, and from there wandered forth to deal with effete cells, and so on. They were found in large numbers in the dermis, so that the white mouse turned blue. If, however, the mouse became pregnant, it turned white again and the cells were found concentrated in the decidua isolating the cells of the chorionic villi and afterwards in the placenta defending the tissues from the further encroachment of the chorionic cells. Such cells are always found in a similar relation to cancer cells.

Theoretically, as we have seen, the cells of the phorozoon have an environment which has slightly greater hydrogen-ion concentration than that of the sexual generation. The fact that sea-urchin eggs can be started developing without fertilization by increasing the hydrogen-ion content of the sea-water by adding lactic acid is very significant in this respect.

What evidence have we that there is anything abnormal in the blood and tissue fluids in cancer?

Powel White, after prolonged observations of the relations between substances excreted in the urine of cancerous and non-cancerous patients, has found quite definite differences in cancer patients, so much so that some of us are of the opinion that he is in a position to furnish a test. However, he is not prepared to do so yet definitely. Others, too, have found definite differences in the urines of cancer cases.

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As already mentioned, Shaw-MacKenzie has found a definite reduction of lipase-adapter in the blood of cancer cases. Others have found a decreased sugar tolerance.

I am not sure whether observations have been made in the hydrogen-ion content of the blood and tissue fluids. I rather think they have and that differences have been found.

There can be no question at all, to my mind, that there are differences and that this change is brought about by chronic infections of the intestinal tract leading to abnormal intestinal and liver metabolism and abnormal metabolism in the tissues with the increased production of purin-bodies and consequent production of uric acid and urates, a condition which used to be ascribed to a uric-acid diathesis but which, we know now quite definitely, is caused by a chronic infection, and that this condition can be definitely corrected by immunization with the infecting microorganisms. It is probable too that, by altering the diet to one poor in animal protein and uncooked fats, leaving their microbes little to work on, one part of the vicious circle produced by them will be broken. A vegetarian diet has long been advocated by Haig for the treatment of cancer, while, more recently, Monkman Copeman has produced great amelioration in many cases in inoperable cancer by giving a diet free from fat-soluble Vitamine A. This vitamine might almost be called a growth-vitamine without which calcium is not sufficiently retained in the bodies of children and, when it is insufficient (as shown by Korenchewsky

and Miss Luce) **the parathyroids** hypertrophy in an increased effort at retention.

As I have already suggested, the direct submaximal stimulus damages the cells, gradually preventing them from reaching histological maturity and injuring the nucleus so that the number of chromosomes is reduced. As I have said, many have searched long for a specific cancer microbe and Doyen found staphylococci so often in cancerous tumors that he christened it micrococcus neoformans. Crowe has given a similar name to similar microbes often present in cases of rheumatism. Such microbes are also very commonly the cause, as I have shown, of Bright's disease. Ford-Robertson, 16 years ago, demonstrated frequently intracellular microbes which he then thought to be specific. Later, he found, in making anaerobic cultures from tumors, that different microbes could cause them. Further, he proved their relation to causation by inoculating these cases with antigens made from them, producing focal and general reactions, and the disappearance, permanent in some cases, of growth when it had recurred after operation. Pain, too, has investigated the bacteriology of spontaneous tumors of the breast in mice, excising portions of them and incubating them in fluid medium. He has obtained growths of staphylococci and streptococci in 15 out of 20 tumors so investigated.

However, he did not test out these microorganisms by therapeutic immunization, which gives the absolute proofs of infectivity, as Ford-Robertson did and as I had done before.

We may safely assume, then, that the chronic irritation, the chronic submaximal injury to the cells is brought about by quite ordinary infecting microbes in the majority of cases and that the change of environment in, at any rate, carcinoma cases which enables the tumor to develop is also produced by microbes by way of a chronic gastrointestinal infection. But that, if the environment has been thus made suitable, any chronic submaximal injury can produce a cancer.

We have, therefore, very definite lines on which to direct our lines of advance in treatment.

Surgery, our only hope until recently, in deep-seated cancer, has signally failed to achieve anything but a temporary relief for at the best five years in about 30 percent of cases, even in such easily accessible cancers as those of the breast. Had I cancer, I confess I should be in a quandary as to whether I should have it removed or not, except (a) if it were in the very early stages for investigation, (b) if it were advanced and not amenable to treatment, to possibly relieve pain or in the hopes that it might give me a legitimate way out.

There is always a chance of dissemination with the ordinary cutting method. The diathermy knife seems to me more desirable. Radiation has been very successful for many years in superficial cancers such as rodent ulcer. Radiation with x-rays has probably increased the successes after removal of growths. Certainly, the cross-fire method with emanation tubes of Stevenson and Joly has given great relief in many inoperable cases. I've seen a patient with a papillomatous ovarian cyst of the ovary, which had become generalized throughout the peritoneum, obtain a new lease of life and rapid relief from intense pain by radium application done by Dr. Stevenson—one of the most dramatic recoveries I have seen in the drama of the recovery of the apparently incurable.

The Erlangen workers have undoubtedly made a big advance in the treatment of deep-seated cancer by radiation.

I do not think that there can be any question that there are at least two effects in the killing of cancer cells by this method, possibly three: (1) the killing of the cancer cells, the lethal dose must be sufficiently comprehensive not to stimulate any of them; (2) the absorption of the hydrolyzed cell with the formation of specific antibodies and more efficient phagocytosis by the macrophages and other such cells already mentioned; (3) the direct stimulation of the tissues and these phagocytic cells by the rays.

In this connection, it should be mentioned that injection of the suspension of the tumor cells or of press-juice of removed tumors has produced results that are sufficiently encouraging to proceed further. I have always wanted an opportunity to inject a patient with the solution of a tumor produced by radium, just as one can do successfully with pleuritic fluid. One cannot think, however, that anything like finality has been reached in the treatment of malignant disease. We have not got weapons that will give us anything like 75 percent of cures or more, as we have in the case of tuberculosis, for instance; nor have we, as in the case of tuberculosis, a means of prevention so completely efficient.

Of course, cancer is not nearly so important to a community as tuberculosis.

It is a terminal disease and does not kill before 20, 30, 50 or more years of service has been given to the State, while most vic-

tims of tuberculosis die young, before they have given any service worth while to the State. So, we realize what a dead loss this is, in view of the fact that each adult worker of the lowest standard of education costs at least £500 ($2,500).

The spontaneous disappearance of cancer, even when it has occurred, has been in the experience of most of us. Can we find out why this occurs? It must be due to a change of environment—a change in the condition of the patients' tissues that enables them to resist further hydrolysis and so reduces the power of the cancer cell that it cannot nourish itself with the food available. This may be brought about, (1) by removing the cause of irritation and so restoring the vitality of the normal tissues and, by removing the cause we may prevent the formation of further malignant cells, (2) by restoring the environment to normal, the cancer cell cannot develop. This can be done by immunization with antigens of the causative microbes aiding the change of environment, by diet.

The following case is a good illustration of the effect of removing the source of irritation and also probably of altering the environment. In about 1912, Dr. Glenn asked me to see a case with him of recurrent epithelioma of the vulva in a woman of 40. She had already been operated on twice, with extensive removal of the clitoris, and so on. The disease was undoubtedly recurring. She had had for years an irritating vaginal discharge. I isolated the causative microbe from this and gave her a full course of immunization. The discharge was relieved; the signs of recurrence disappeared. This patient has kept in touch with me and there has been, so far, no recurrence. It is a curious thing that this patient's mother died of cancer of the vulva. In the same way, I have produced most satisfactory amelioration of the symptoms of cancer of the rectum by immunizing with antigens of microbes isolated from the bloody diarrheic stools, the blood and diarrhea disappearing and the general health being greatly improved. Unfortunately, this other patient succumbed to operation.

As, I have conclusively shown that the ordinary infections of the gastrointestinal tract, such as occur in gout and rheumatism, are brought about by swallowing microbes from the lesions in the buccal and respiratory passages. These lower the resistance of the tract and the coliform bacilli become pathogenic as they always do if they get the chance. By immunization, the indican in the urine indicating abnormal intestinal putrefaction can be brought down to normal, as can the uric acid and urates indicating abnormal liver and tissue metabolism.

You may ask, how is one to obtain the focal organisms in a case of closed cancer? One may obtain them from the growth itself by removal, as Ford-Robertson did in cancer and the Leytons in sarcoma, or one will probably find the causative organism in the urine. It is very satisfactory that this is so often the case. For instance, I have isolated the cause of iritis from the urine and cured the patient with an antigen made from it. I have found the cause of pernicious anemia in the urine and cured one of the two cases so far treated by me with antigens made from these microbes. I have so far not done so in cancer cases. I would like to again say this, that one can only identify such microbes as being the pathogenic ones by the production of focal reactions and of therapeutic amelioration—or the reverse if the doses are unsuitable or given at unsuitable intervals.

How much can be accomplished by diet, is well illustrated by a case verbally reported to me by Copeman, that of an elderly doctor with primary cancer of the bowel, with easily palpable Farr's tubercles of the liver. Under Copeman's diet, there was such retrogression that the patient returned to his practice and died some years after the intercurrent infection.

Finally, what we hope for in the immediate future is prophylaxis. We have the certain means of clearing up focal and general infections by immunization, and these ought to be cleared up before such serious complications as cancer occur.

The Biological and the Non-Biological

By CASPER L. REDFIELD, Chicago

IF you cut off the tail of a mouse, the wound will heal. If you cut off the tails of twenty mice, twenty wounds will heal. If you breed these mice and cut off the tails of their progeny, the new wounds will heal. If you breed this second generation and cut the tails from the third generation, again there will be a process of wound-healing. If you repeat the tail-cutting process, generation after generation, the process of wound-healing will be repeated generation after generation.

If you should carry on that process for twenty or one hundred generations, will the wounds heal more rapidly in the later generations than in the earlier ones? The followers of Weismann say, "No." They say that the length of time taken for the wound to heal is proportional to the length of tail cut off, and it is proved that tails do not get shorter in later generations.

Does the reader deny that the Weismannites say that the length of time required for healing a wound is proportional to the length of tail cut off? Then, I ask, what is the evidence that the wounds will not heal more quickly in the later generations? The environment does not heal a wound. The healing of a wound is a physiological process and, consequently, biological in nature.

When Weismann cut off the tails of mice, the wounds healed, but the tails stayed cut off. Some animals have the power of regenerating lost parts. If those mice had had the power of regenerating tails, what would have been the result?

The ascidian, Ciona, has in front two small tubes, called siphons. Kammerer cut off these tubes on some of the ascidians and found that they would regenerate. He also found that, in regrowing, these tubes grew to be a little longer than before. He then cut off the regenerated tubes and found that, in regrowing a second time, they grew still longer. He also found that, as often as he cut them off, they would regrow, and each time they would become a little longer than before. After this process had been continued until he had ascidians with tubes of great length, he bred them and found that the offspring had long tubes like their parents.

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Cutting off tails or tubes is a mechanical operation of the environment and is non-biological in nature. The process of regeneration is a physiological process. The environment does not produce a new tube on an ascidian. That new tube is produced by the powers of growth in the animal, and the increased length of tube after each amputation shows that those powers are developed by exercising them. Those powers of regrowth were greater after the last amputation than they were at the first, and that increase of powers is an acquired character. The fact that the offspring had long tubes like the parents shows that this acquired character was inherited.

The exercise which consists in hoeing corn or walking on the road is a physiological process going on within the muscles exercised. It is a process which increases the powers of the muscles exercised. The environment does not produce this physiological process. The teaching that the results of exercise are to be classed with effects produced by the environment is not only erroneous of itself but leads to incorrect deduction and false information. By continued exercise, a man may become an athlete, but he cannot become an athlete by sitting still, no matter what the environment may be.

If a man exercises the muscles of his arms, those muscles will gain in muscular power, and that gain is an acquired character. If a man exercises the muscles of his legs by walking or training for foot races, the leg muscles will gain in power, and that gain is an acquired character. If a man exercises his mental powers by study, or by alertness such as is required in ball games, his mental powers will develop as a result of such exercise, and such development is an acquired character.

In each of these cases, the increase in powers is the result of a physiological process going on within the cells of the organs exercised, and is the direct result of such exercise. Living tissue is at once the most pliable and the most resistant thing in existence. It will of itself adapt itself to any environment and, while the environment may kill or injure a living thing, it cannot directly modify it in any manner whatever. The modifications in powers which a living thing makes within itself by its own operations are acquired characters, and they are the only things which are acquired characters.

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The injuries which the environment causes to a multicellular organism by destroying some

of the cells of that organism are neither acquired, nor are they characters. The verb *to acquire* means, to obtain by one's own efforts, and no action of the environment comes within that meaning. A "character" is something characteristic, and that in turn means the essence or nature of the thing itself. No action of the environment can change the nature of living protoplasm.

We are commonly told that acquired characters are not inherited, but such statements have their origin in a total failure to take into consideration the distinctions above set forth. The experiments cited to show the non-inheritance of acquired characters are all experiments directed to the actions of the environment. Not one of them is directed to those physiological processes which form the only source of acquired characters. The biologists themselves have been the greatest offenders in confusing the biological with the non-biological.

During the war, our drafted soldiers were placed in training camps and kept there for more than a year before being sent over to France. That training was exercise of muscle and brain which developed physical and mental powers, and those developments were acquired characters within the meaning of that term. After the medical men had watched the effects produced by this continued exercise, the American Medical Association, at its convention in Chicago, in 1918, passed a resolution recommending universal military training for all men for the "mental and physical benefits obtained thereby."

Early in 1923, some letters of inquiry were sent to leading institutions for research, to several universities and to some biologists. These letters distinguished between exercise and actions of the environment, recited the training of soldiers in the camps and the recommendations of the American Medical Association, and asked if there had been any research on man or the lower animals to see if "benefits" of this kind were inherited.

The reply from Harvard University did not say whether this matter had ever been investigated. It simply stated that this training would come under the head of effects produced by the environment which had been shown by Weismann and others not to be inherited.

The reply from Princeton University said that there was "no satisfactory research" of this character. That reply admits that there has been research on this line, but that it is not "satisfactory" to the writer of the reply. It also admits that he had no evidence to support his own views. In other words, that reply admits that every particle of evidence in existence directed to this point shows the inheritance of acquired characters.

The reply from Johns Hopkins University referred to the work of Kammerer which, it said, related to the inheritance of "environmental effects," to my work on men and horses, and to some minor items. When attention was called to the fact that the question asked about the animal's own activities and not about the environment, a second letter from the university admitted that there was no work on this matter except mine.

There were replies from the National Research Council, the Eugenics Record Office, and elsewhere. Some of these referred to my work, but not one of them could point to a thing which indicated that acquired characters are not inherited. The most that any of them could do was, to refer to evidence that non-biological things are not biologically inherited.

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When a person is vaccinated, there is inserted in the body what is known to be a weak form of smallpox virus. The reaction to this is like the healing of the wound in cutting off the tails of mice, but is complicated by the fact that there is a specific poison to fight. This reaction is physiological and, consequently, biological. It is a process in which the system develops its powers of meeting and overcoming this specific poison. And it may be added that there is no known way of acquiring resistance to this poison other than through the exercise of fighting the poison itself.

There is a record of smallpox extending back several hundred years. In those hundreds of years, the more susceptible persons were killed and the more resistant ones survived, but that did not bring about improvements in the resistance to smallpox. That disease was worse in the eighteenth century than ever before. About the beginning of the nineteenth century, vaccination became general, and the people of the present day are mostly descended from two or three generations of vaccinated persons. At the present time, smallpox is not the serious disease to the unvaccinated persons that it was a hundred years ago. It is quite clear that a considerable portion of the acquired resistance coming from vaccination has become inherited by the youth of the present day.

Bacteria which are pathological to human

beings are plentiful where human beings are plentiful, and they are scarce where human beings are few. When bacteria get into the blood stream in small numbers, they are rapidly killed off by the powers in the system, and the person attacked does not know of the attack. When they gain entrance in large numbers, then we have the conflict known as disease. In this conflict, the bacteria increase in numbers by reproduction, and the powers of resistance are built up by exercise and by calling upon the powers in the various organs of the body for help. The outcome is like what General Forrest said about strategy,—it depends upon which side can get "the mostest men there the firstest." The fact, that the parts of the body attacked get help from other parts, is seen in the other fact that a person recovering from an illness is in a weakened condition. The general store of energy in the system has been used up in fighting the disease.

In cities, pathological germs are more numerous than in the country, and the average person meets small attacks much more frequently than he does large ones. Each time he meets and defeats a small attack, he is "vaccinated" against the particular germ involved. What really happens is, that he builds up his powers of resisting the disease by exercising the powers he had before. In its essentials, it is the same as a man getting strong muscles by swinging dumbbells and Indian clubs.

When men from both city and country are brought together in large groups, as in armies during war time, heavy attacks by pathological germs are more common than at other times. Under such conditions, it is found that city men are much more resistant than men from the country. Such resistance is evidently due to the fact that the city men, to a much greater extent, than the country men, have developed the proper resistance by practicing on small doses.

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Autopsies show that about ninety percent of the persons living in cities and dying from other causes had been attacked by tuberculosis and had recovered without being aware of the attack. In country districts, such attacks are less common, and they were rare among semi-savage tribes before the advent of the white man. Some recent statistics in South America show that the children of city dwellers suffer less from attacks of tuberculosis than do children of country dwellers. The report says that "the less extensive the prevalence of tuberculosis in a population, the greater the fatality of tuberculosis, or, reversing the process, the more widesperad tuberculois is in a population, the less fatal is the form of disease."

There is nothing to indicate that any disease takes on a less fatal "form" simply because it becomes widespread. The real reason why a disease becomes less fatal is, because of the resistance developed to it. When the "form" of tuberculosis which is not very serious to city dwellers is taken among American Indians or the natives of Africa, it is very fatal. When the form of measles which is not fatal to the white child is taken among people not before subjected to it, it is very deadly.

During recent years, there has been a concerted attack on tuberculosis, and it is claimed that the disease is whipped. It is also claimed that this result is due to educating the public in ways of avoiding the disease or recovering from it. There is perhaps something in that; but, having lived for some years in cities, villages and country, I do not see that the young men and women of today take any more pains to avoid tuberculosis than did the young men and women of fifty years ago.

There is another explanation of the decline of tuberculosis. About fifty to seventy-five years ago, the farming districts began to become more thickly settled, and manufacturing began in villages and cities. Naturally, this caused a continuous stream of persons moving from country to villages and cities and consequent congestion of populations, and this in turn increased tuberculosis in crowded districts.

The persons going from country to city came from ancestry which had not met tuberculosis and had not developed specific resistance to it. Under such circumstances, all these new city dwellers had to meet that disease; but, the great majority of attacks are easily within the resisting powers of healthy persons. As time went on and new generations were born, greater and greater proportions of these later generations came from parents who had developed resistance by fighting light attacks of the disease, and such persons inherit the resistance developed by their parents. The race is becoming immune entirely independently of antituberculosis campaigns.

1542 Monadnock Block.

Notes on Parageusia

By FRANCIS S. WILDNER, M. D., New York City

THE term parageusia, derived from the Greek *para* (away from) and *geusis* (taste), means a false taste perception. As used in the medical sense, it denotes the peculiar unpleasant sensations of taste (or a perversion of taste) which are especially found in patients suffering from an abnormal intestinal decomposition of foodstuffs. These disorders are found whenever there are disturbances in the intestine between duodenum and anus. The sense of taste acts as a safeguard against the ingestion of poisonous and even inferior articles of food. Thus, for instance, all the poisons derived from the plant kingdom are typically bitter to the taste. The best foodstuffs are free from taste as, for instance, the fats, proteins and polysaccharidic carbohydrates.

The ordinary gastric distubances do not produce any unpleasant sensations of taste, but attacks of diabetes and gall-stones are frequently associated with this disorder. Diabetics of the initial stage often complain of a disagreeable sweetish taste in the mouth, no matter what foods are taken; they may even get a sweet taste from smoking tobacco, leading to a disgust with the well-beloved weed.

The permanent presence of products of intestinal putrefaction defatigates the real perception of them and they are not felt in chronic cases; but they are brought to attention as an unpleasant combination when the patient eats such foods as eggs, milk or broiled meats, as instances of the above-mentioned best foodstuffs.

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There are two ways of counteracting this abnormal sensation, either locally within the mouth or generally by introducing appropriate medicines into the system.

In the first place, we may paralyze the taste sensation locally by giving Gymnemic Acid* or we may tire the sense of taste by excessive preliminary irritation. We advise the patient to chew such spices as red pepper, ginger, cloves, onion, seeds of caraway, anise, leaves of laurel, and spit out the saliva which forms in the mouth. This is done half an hour before lunch and dinner and prepares the mouth for taking valuable food without unpleasant sensations of parageusia.

* Gymnemic acid: An acid from Gymnema sylvestre, a southern Asiatic shrub. Placed in the mouth, it temporarily abolishes the sense of taste; according to Oefele.

The general way is, to give a drug such as Orexine-tannate which, while tasteless and odorless, is taken into the circulation. The effect of the assimilated orexine on the taste sensation, with the putrefaction products of intestinal absorption, is such as to render them tasteless.

In anemic young girls, we often find a peculiar dislike for certain foods. This concerns only girls affected by remarkable obstipation. A somatic examination shows commonly a sensitive enlargement of the left ovary which inhibits the action of the descending colon and sigmoid. There is retardation of the passage of the intestinal contents and absorption of products of putrefaction from these parts of the bowels producing the peculiar distasteful sensations.

Gymnema sylvestre is a plant growing in the hills of Eastern India which contains a glucosidic acid. This is used by the native hill tribes as a medicine against snake bite and has the peculiar property of paralyzing the sense of taste.

Yerba santa and certain parts of the blossom of a cactus type, in South Africa, are other herbs that have a partially similar property of suspending the sensation of taste.

Orexine is a synthetic organic substance of phenyl-dihydro-chinazolin and is used only in the chemical combination with tannic acid. In the intestinal tract, it is taken up under the influence of the intestinal ferments and carried into the circulation. It combines its effect upon the taste sensation with that of the putrefaction products circulating in the blood and thus neutralizes their action on the sensory taste papillæ of the tongue.

There are many cases on record which have been successfully treated with either Gymnema sylvestre or by the method of chewing spices, or by orexinetannate.

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Almost all patients suffering from acute or chronic disorders have insufficient nutrition. Its cause is lack of appetite; and, on careful examination, the deeper cause is found to be parageusia. In many cases, the general public notices correctly the parageusia as the cause of lacking appetite.

Almost every case of insufficient nutrition may be overcome by a successful treatment of this parageusia as outlined. Either of the above-mentioned methods may be employed.

This is not the place to show the efficacy of these three treatments. Results may be found in the extensive literature. But judging from some cases, it is certainly important to select the proper method and, therefore, I will describe one of my cases.

Mrs. T., 47 years of age, with the diagnosis of an old abscess in the pancreas, who did, as yet, not show any sugar in the urine, but showed all the other respective symptoms. 5 ft. 11 in. On account of loss of appetite, her weight had decreased to 111 lbs. For three weeks, she was advised twice daily to masticate spices before meals. Her appetite improved and her weight increased. For ten days following, the spices were discontinued and orexine was given twice a day before meals. The patient declared that she acquired a real appetite and experienced better improvement than from the spices. Then she was told to try spices again without orexine. But, at her own request, the spices were again discontinued and orexine given. The application of spices with tiresome mastication and the spitting—unesthetic for ladies—the washing of the mouth after chewing spices: all these are disadvantages.

This case shows that the patient prefers orexine to the spices. The efficiency for creating appetite was also better in orexine than by taking spices. Generally, the public claims to prefer a drugless treatment. Many other cases and this particular one indicate that, in cases of malnutrition on the very common basis of parageusia, the drug treatment with orexine has been preferred to a drugless treatment by the spices of the average household kitchen.

For the success of the physician, it is very important to satisfy the wishes of the sick people. Not in every case is this possible. For the above case of parageusia different possibilities were open. I consider that it was most satisfactory to combine pharmacotherapy with drugless therapy for such a subordinate symptom of hypurgical character and to give a chance to the patient to choose. Certainly, in similar cases, satisfaction of the wishes of the sick people does no harm to the real therapeutic success.

Anyhow, for similar cases, the professional pharmacotherapeutic treatment may additionally be given and neither the application of spices nor the application of orexine (being a hypurgical) will interfere with any such principal pharmacotherapeutical treatment for which treatment no criticism from the patient is accepted.

MAKERS OF FLOWERS

By Harry Lee

WHEN tiny Filomena,
Maker of tinsel flowers,
First saw the blooming
Fields of spring glisten
In sunlit showers,
She stood aghast,
Not having dreamed
Such loveliness
Could be—
Silent she stood,
Eyes wonder-wide,
Hands clasped
In ecstasy—

Then, thinking
Of the ones who toil
Through dim unending hours,
"The children—where are they,"
She said, "the ones that—
Make the flowers?"

The Outlook

Surgical Seminar

Conducted by GUSTAVUS M. BLECH

Surgical Exercise No. 1

THIS exercise appeared in the May issue. It is repeated here for the convenience of the reader:

You are called to see an old man whose urine had not passed all day. There is no anuria, but a plainly overdistended bladder. Soft-rubber and metallic catheter do not enter the bladder, there being a real obstruction (non-spasmodic) at the sphincter vesicæ (stricture? There is an old history of gonococcal infection). The distress is great. What will you do to bring relief without resorting to major surgery?

Discussion by Gen. Geo. Acheson, Kingston, N. B.

I take it here that treatment of the emergency only is required; and, it goes without saying, that this treatment is to empty the bladder as speedily as possible. But how?

This, to some extent, will depend on the cause of the retention. As to this, we have the information that the patient is an old man, with a former history of gonorrhea; that catheterization has been unsuccessful; and, that there is an obstruction at the sphincter vesicæ.

We have to deal, then, with one of two conditions: (1) organic stricture; (2) prostatic obstruction. In either case, the retention may be immediately relieved by aspirating the bladder, preferably supra-pubes. As the obstruction is at the neck of the bladder, it is probably not stricture but an enlarged prostate; in which case, puncture through the rectum may not be possible.

I might remark here that cases in which some kind of catheter cannot be introduced by a competent surgeon, especially after relaxation by an anesthetic, are not numerous, and are mostly confined to old chronic strictures, which have been maltreated by unwise manipulation.

Discussion by Dr. I. E. Crack, Hamilton, Ont.

To give the old man relief without major surgery, I would, under the most careful asepsis, pass a trocar and cannula into his bladder above the pubes and draw off his urine.

Following this procedure, I would make a thorough attempt to pass a filiform bougie into the bladder, in order to dilate the stricture.

Discussion by Dr. J. J. Paul, Sunderland, Ont.

I struck a case of retention, some thirty years ago, similar to the one given in Surgical Exercise No. 1, differing from the latter only in that the gonococcal history was wanting.

I then could not get any kind or size of a catheter into the bladder, but a small-sized trocar-cannula, introduced just above the pubes, helped us both out.

A second introduction was necessary; but, after that, catheterization was easy. The Seminar is great.

Discussion by Dr. E. C. Junger, Soldier, Iowa

The patient under discussion in Surgical Exercise No. 1 is in such great distress that I am not going to waste any time in theoretic pour-parlers, but what I will do is to introduce either a large aspirating needle or a trocar suprapubically into the distended bladder and drain off the urine. The hope is that the congestion will be relieved and, after that, a catheter can be passed per urethram. If this, however, should prove impossible, suprapubic cystostomy is the next step to be undertaken.

Discussion by Dr. J. L. Pritchard, San José, Calif.

You have something of real merit started now. Permit me to urge every reader of CLINICAL MEDICINE to get behind this proposition and help to put it over. Let's not be like the tramp who always kept his back to the wind.

Now for the problem: Perhaps a real, good internist could give him lobelia, use hot packs and get something going. However, I would sterilize my trusty trocar, shave over the bladder area, paint with 2-percent mercurochrome, inject a small area with a local

anesthetic and plunge the trocar into the bladder. It would be wise not to empty the bladder too rapidly. When empty, seal the wound with collodion, and make an effort to open up the natural passage with sounds or dilators, so that the operation would not have to be repeated in the usual eight hours.

Discussion by Dr. Henry L. Davis, Los Angeles, Calif.

If called to see a case such as the one described in Surgical Exercise No. 1, I would immediately endeavor to relieve the man of his great distress. After having accomplished this, I would search for the cause of the obstruction and would institute proper surgical treatment in an effort to prevent similar obstructions.

The first thing that I would do in this case, after I found a real obstruction to be present, preventing the passage of a catheter, would be to try to engage a filiform through the strictured portion of the urethra. If this proved successful, I would attempt to engage a second and a third filiform alongside the first one. These filiforms would allow capillary drainage, if held in place, and would relieve the distention of the bladder.

If the above procedure could not be accomplished, I would sterilize the skin over the pubes and, under local anesthesia, make a small incision in the skin just above the symphysis, following which I would puncture the bladder wall with a fine trocar. If I found evidences of bladder infection present, I would irrigate the bladder, through the trocar with a weak solution of silver nitrate. After emptying the bladder by this means, I would try once more to pass a small caliber soft-rubber catheter and, if successful, would hold it in place by adhesive tape.

The subsequent treatment of this case would depend entirely upon what pathological conditions were found to be the cause of the overdistended bladder.

Discussion by Dr. Frank William Porterfield, Waterloo, Iowa

I have, for some time, enjoyed reading and criticizing (to myself only) that department of the Journal in which medical and surgical problems are submitted and answered by such readers as feel that they have a remedy, or a method, which will be of service in a given case.

I have not previously ventured to do this, but, in the May number there is an implied query about a condition that has been my fortune or misfortune to meet many times. I refer to the Surgical Exercise No. 1, on page 327.

The late J. B. Murphy went on record, a number of times, in my hearing to let such cases alone, saying that no bladder ever ruptured from retention and that the urine would eventually attack and get through at the point of least resistance, which he said was via the urethra, stricture or no stricture.

While this may be true, it is also true that such cases suffer a great deal of pain while waiting for this to take place, and, in my experience, I have never found a patient with a badly-distended bladder with inability to void who was willing to wait for "nature to take its course."

In the case cited, the trouble may, of course, be a hypertrophied prostate or an organic stricture. The problem being what shall be done for immediate relief, the following has always been my practice and I have never had an experience that caused me to regret its adoption:

Under strict aseptic precautions, I sterilize the abdomen low down in the median line and, under novocaine anesthesia, make an incision through the skin only, about ¼ inch in length, and then plunge boldly a trocar into the bladder and evacuate. Immediately following this, there is usually enough relaxation of the urethral tissues to permit the careful and successful introduction of a filiform bougie, followed by another and, finally, a soft-rubber catheter of a small size; this is retained for one to two days, pending a decision as to measures for permanent relief. I would like to add that, if the trouble is prostatic hypertrophy, 4-grain tablets of chromium sulphate, four times daily, will often shrink the prostate in a few weeks so that urine can be voided naturally.

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Editorial Comment

As usual, I am writing the Seminar the last Sunday of the month, and, as I always feel I am chatting with friends, I avoid all formalities and just talk things over.

Again, many complimentary messages have come in about the Seminar. I had to eliminate a few, simply because I do not enjoy violent blushing. I am glad to say that the Seminar has come to stay as long at least as I am capable of continuing; and, as for the future, it rests entirely with our readers. Now, I desire it distinctly understood that I do not care to pose as a surgical genius. I have years of hard toil and a good deal of reading behind me, and I am not stopping by any means, but keep up as if I had but yesterday

left school. I seem to have the faculty of presenting problems in a manner to arouse interest, even when I myself had little hope that the subject selected was a fortunate one.

The Seminar idea can be expanded to make it a real post-graduate academy—it is all up to the readers, with a total outlay of an occasional two-cent stamp for postage and a sheet of paper and good will.

Now, with regard to Surgical Exercise No. 1. It is simplicity itself. Nevertheless, it brought forth a fruitful discussion. The diagnosis of the case is obscure. I made it purposely so, and we confront one particular condition which demands instant relief, and no hospital is available or desirable, for, otherwise, the answer is devoid of any difficulties.

In this case, we are not concerned with the exact diagnosis nor with the scientific management of the case, as the requirement only calls for relief with avoidance of any major surgical operation. The only major surgery that can be thought of in this case is a preliminary cystostomy followed by either a prostatectomy or external urethrotomy with a possible extraction of an impacted stone as the case may eventually dictate.

We are not concerned with these.

Catheterization having failed, by which I meant to imply that it need not be discussed, we have our resources indicated by the gentlemen who participated in the discussion.

Let us review the resources. If there were a spasmodic condition, a hot sitz-bath and some sedative might prove useful. But, even though the obstruction is distinctly organic, the overdistention in itself might produce an irritability of the sphincter vesicæ, and a hypodermic injection of ¼ of one grain of morphine with or without a 1/120 of one grain of atropine sulphate may produce wonders in about five minutes.

Then, there is a mechanical trick which has served me excellently in at least two instances; and that is the injection into the urethra of half an ounce of warmed glycerin with an ordinary urethral syringe, which can be obtained in almost any drug store. The glycerin seems to act better than a catheter, and, while the hygroscopic action is not always a pleasant one, the patients sometimes complaining of a burning sensation, they jump sky-high from joy because of the relief which is produced in a very few minutes.

Aspiration is the *ultimum refugium*, but also the sure method to empty the bladder, through which time is afforded for more permanent measures, as the indications dictate. The situation as presented in the exercise does not call for a prolonged drainage of the bladder through the suprapubic route; hence, it is safer and better not to use a trocar but an ordinary aspirating syringe, which is pushed into the bladder, after knicking the skin in the median line—be sure of that!—and almost immediately above the os pubis. The aspirating needle can be attached to any appliance desired for syphonage; a long piece of rubber tubing being sufficient for ordinary purposes, as forceful evacuation of the bladder is not indicated nor proper.

It is essential that this little procedure be done with the patient in the prone position, on the bed or kitchen table. After a sufficient quantity has been removed, the needle is withdrawn and the procedure is finished for the time being. Attention to the wound is not necessary, a small piece of adhesive tape over the little external wound sufficing. There is no leakage from the bladder wound and no danger from infection, if the appliances have been sterilized and the pubic region treated with alcohol or tincture of iodine.

A large trocar is to be used only when a modified cystostomy is indicated, but that is beyond the scope of this exercise.

I am forced to comment somewhat on the statement made by a valued contributor, who quotes Murphy, that rupture of the bladder from overdistention is out of the question. I recall, in 1915, quite a heated argument between the writer and the late Dr. Murphy (we were office neighbors and our relations had been very pleasant). When I told the genial surgeon that there were cases reported in the literature, he countered by asking me whether I myself had seen a case of rupture from that cause. I had to confess that, outside of external trauma, I had seen only one case of rupture, and that was produced by a young doctor who washed out a bladder. I am in the same position today. I have had no observation of my own—the reported cases are in foreign lands and not altogether free from the element of doubt; but, I do know positively that distention of the bladder in old strictures is very often the immediate cause of urinary infiltration of the perineum, and that means virtually death unless some surgeon is bold enough EARLY to make large incisions. However, this question does not properly come within our scope and we do not desire to wander into side-paths too far.

The discussion again has pleased me. I thank my old friends, I greet with pleasure

the new ones, and ask you to spend another pleasant afternoon with me a month hence.

Again the Case of Major F.

Major F. writes me that he is very appreciative of what the Seminar has done for him. He is temporarily in San Francisco and hopes to see Dr. Achard when he passes through that city. Major F. plans to come to Chicago to place himself in my care. I hope that will not be necessary and that Achard can give him non-surgical advice for his benefit; for, while I have nothing definite and would examine and treat him as if I knew nothing of the case, I am inclined to the belief that another and important operation seems indicated.

Several letters have come in concerning this case, too late for publication in due time. To send in letters about a month after the solution has been printed means to upset somewhat the orderliness of procedure. However, we are pleased to publish one communication, which speaks for itself.

Letter from Dr. Harrison G. Palmer, Detroit, Mich.

In regard to your California friend, I think that, except for the Mayo diagnosis, all others are wrong. But, when it comes to treatment, I think that medicine will cure him, unless he has some malignant condition. Four years ago, I had an attack of sciatica and was laid up for about three months. Mine is due to a loose sacro-iliac joint. I think it was caused by too much auto-driving. At present, I am doing a lot of work, but do not drive as much. When I do have some pain, it is always brought on by overwork or some nerve strain. When I had my severe attack, I got about as much benefit from my medical friends as the doctor did. But, there seemed to be no improvement in my case until I read an article in CLINICAL MEDICINE by Dr. Dowd, of Buffalo, on his test for phosphates by his phosphatometer. This article appeared in 1920. In this article, he claimed that many conditions were caused by a low or a too high phosphatic index. At this time, I was so weak that I could hardly get around; but, like all doctors, I was trying to do some of my work. In testing the urine, I found that my case showed a very low phosphatic index. I have found this condition present in many neuritis and nervous-prostration cases. I always make this test now in all chronic diseases and find it a great aid. I commenced, at this time, to take nux vomica and phosphorus, as recommended by Dr. Dowd. In a very short time, I noticed a great improvement; both in regard to pain and increase of strength. I had many of the symptoms mentioned by the doctor, such as gas in the bowels and severe pain in the bladder. I have a friend who is an osteopath and I have had a few adjustments; but there was no relief from them. The only real relief came from complete rest and the above tonic treatment. I was in the army also and hope that, in some way, the California comrade will be relieved and cured. The remarks made by the chiropractor are worth considering; for, in all cases of sciatica that I have seen, the pelvis is tilted and anyone can notice this by measuring. I had a severe tilting and some curvature of the spine. As I improved, this all disappeared and now, aside from some tenderness occasionally in the nerve, I am well. If I am not driving at all for a week I feel much better and, if I walk a great deal, I am much better off. A good belt is of benefit after the displacement is corrected; both in relieving pain and in preventing a return of the condition. Possibly I have rambled on about this case; but, wait until you get sciatica and your interest in the disease will increase. If you think there is anything in this letter that will be of benefit to your friend, you can send this to him. If he will read the article in the Journal that I mentioned, he will also get information that I can not give him. I am enjoying your articles in the Surgical Seminar very much.

Surgical Exercise No. 2

You are called to see a man who had been shot. You have with you your bag containing dressings, a surgical pocket case, hypodermic syringe and the like.

On arrival, you find that the patient, who had been shot in a holdup, is bleeding profusely from the intercostal vessels in the right side, the bullet having entered the chest between the sixth and seventh ribs near the axillary line.

Whether or not the bullet has entered the lung is very problematical, but it seems incredible that the pleura remained intact.

The man shows evidences of shock and the hemorrhage must be controlled as the very first step.

Requirement: Describe your method or procedure of controlling the hemorrhage from the intercostal vessels.

Good Medicine

Let us learn as we go, but not forget what we know

Conducted by GEORGE H. CANDLER

Seasonal Diseases

No. 3—Divorce

Station GHC Chicago, Illinois, Broadcasting

THIS is the same old voice you hear, folks. Yes sir, th' same old voice. Now, I'm going to let you in on a little secret—the orchestra has a brand new tune and they're going to play it for you before you listen to the address of the evening. In fact, they're going to play three dance selections—two of 'em old and one new, just off the griddle. The first is "I Love You Sweetheart", the second, "One More Night in Your Arms", and the third, "Your Kisses Ain't Sweet Any More". The last is "the latest". It was written by the author of "Last Year's Hat Is Out of Style", and "I've Lost the Key to Apartment 2 But I've One to No. 9". All ready there, boys? Let's toot!

[They toot and "No. 3" is repeated twice by special (telephone and W. U.) request.]

Well, that's that; and now that you're all in the proper frame of mind to enjoy a little scientific discourse, I shall proceed to talk about the third—and most serious—Seasonal Disease, *Divorce*.

First, as you remember, we had *Love*, followed by *Marriage*, and now we get *Divorce*. This disease is spreading; that is to say, we now get it frequently while our revered grandparents rarely did. Once they contracted Marriage—whether they had Love first or not (presumably they usually *did*)—they stuck like limpets (the limpet, as you of course know, is a "marine gastropod mollusk, having a low conical shell broadly open beneath") on a rock and, as a result, were more or less comfy ever after. On reflection, I imagine that it would be well to point out right here that I simply compare our forbears to the limpet, which sticks closely to one selected stone, because of their marked adherent quality. I don't for one moment mean that they were "gastropods" or "broadly open beneath". Family traditions would lead me to believe they were—though somewhat old-fashioned in their ways—constructed very much along the same lines as we are. Of course, Great-grandma, when fully appareled, didn't (outwardly) much resemble t'ie current Ma-with-a-bob-and-"dawn"-hosiery; neither did Great-grandpa look particularly like a modern sheik. He may have *acted* like one on great provocation, but he certainly never rubbed Vauve on his nose to remove the shine and, if he did emit a faint odor of honest sweat, when he came to his home fireside at eventide, he was proud of it. So was Ma. Only "poor white trash" failed to sweat early and often in this country in those days—and *they* also failed to eat quite frequently.

Yes, my friends, they were simple-minded people, with only a few rules of conduct to govern their private lives and still fewer "laws of the land" to obey. They had an idea that if you loved, you got married; worked hand in hand thereafter (or worked, anyway), raised a family (the larger the better) and generally bore and forbore.

Today, *nous avons changé tout cela;* one side doesn't "bear" willingly and the only "forbear" the other knows is Grandpa. The rules of personal conduct are now so numerous that no one is quite sure which should be adhered to and which disregarded and the laws of the land are even "as the sands of the sea" for number and receive about as much reverence. Of course, when a grain of sand gets in one's eye, one cusses sand generally—but doesn't keep off the beach; so, when one runs afoul of some unknown law and suffers thereby, he says a few things—and takes care to protect himself in future. People are still obeying obsolete laws and

breaking new ones every two or three minutes. The old "law-abiding citizen", like the Dodo, has ceased to be, simply because he could not be one and exist. Some poor folks are not even sure whether they're married—or, if they are, to whom. A man may be married in one state and single in another. This is distressing when touring because you never know how to pack. Again, you might be perfectly "nice people" here and subject to the Mann (or some other) Act ten miles farther west. This tends to uncertainty, instability and unrest. Such conditions are provocative of Divorce and are again provoked by it, so we have the w. k. vicious circle—vicious indeed, but all around us.

People's views on Divorce differ materially. Some think it awful (naturally they never tried it), others think it a pretty good thing under certain circumstances, and still others (to-wit, the alimony army) regard it as a distinct blessing designed for their benefit by a benign Providence. Possibly the truth lies somewhere between.

If Mary Ellen takes John Alexander for her lawful spouse, after due and proper courtship on the part of said John, and gives him her maiden heart, unscorched by alien fires and unmarred by prior experiences, and if said John and Mary, as the years pass, cultivate little fields and she proves not alone a consistent sweetheart but real helpmeet, it would be *"awful"* if he, at forty-five, divorced her because she made stodgy waffles or even if she lost her sylph-like form and insisted upon wearing a complicated harness with a strong hope of improving conditions. It would be equally "awful" if Mary divorced John after ten or twenty years of reasonably serene married life because he failed to excel as a provider or declined to attend church services and prayer meeting three times on Sunday. Easy divorce, on flimsy pretext (or none at all), of the parents of children *is* "awful" but easy divorce for those who are physically, psychically or mentally mismated or whose lives together have become for any reason unbearable, is, from a scientific and truly humanitarian standpoint, most desirable. Which brings us to the point of declaring that were Marriage not quite so readily an acquired dis-ease, Divorce would not be half as common as it is. Granting this point, one is compelled, whether he will or no, to consider the first seasonal dis-ease *Love* and try to find out which of the 57 varieties really warrants Marriage—i.e., of the "for keeps" variety. Were it possible for every Jill at the proper (and this means *early*) time to meet *her* Jack and, having met him, to settle down amongst others in like condition, or who recently were in like condition, all would be well. *But,* unhappily, at the most impressionable age, Jill meets *many* Jacks and 99 percent of these are not looking for *wives* but "gals". Society, long, long ago, calmly adopted the double standard and now it would seem their little tin god has turned and rent 'em. When (and where) the majority of girls were guarded and trained to be modest, reserved and man-shy (in appearance, at least), the wild oats of the errant male had to be sown, either in limited territory or at least far from the home pastures and by stealth. Jack—his wild oats sown—courted Jill along accepted lines and she, like the rose expanding in the noon sun, responded to the only *real* advances she had ever known. He asked her to wed; with proper reluctance, she said "Y-e-e-s!", and they were, and staid that way, content, for such was the way of their world.

The young man who cast sheep's eyes at a maiden who bore the reputation of a "man-killer" was warned that he'd better beware. Sometimes he did, oftener he didn't; but, *if* he married such a one, the woman knew that the whole community was watching to see just "how she'd turn out" and therefore she (usually) turned out according to Hoyle. *Now,* observe carefully the difference. The merry, merry maidens demand that they too shall have their fling and, while Jack sows his oats, Jill goes along and sows a a few of her own. Does the community raise its hands and avert its eyes? Not a raise, not an avert (unless some one takes an awful cropper) and, as a result, slowly but very surely, *both* Jack and Jill are becoming sex-wise and Marriage is no longer regarded as the only possible means of consummating their sweetest dreams. Rather, it is looked upon quite generally as a sort of last resort—a rather boresome necessity, accompanied by distinct disadvantages.

Someone once said "Marriage is the death of romance". Too often that is true, though the union of the right units is a perpetual romance, not ending even when one of them passes across the Dark River. Marriage lightly entered upon is lightly broken. The wearing of a wedding ring does not alone make a woman "good". It is merely a symbol and symbols don't mean much in 1924. A girl today will boast of the number of engagement rings she has. The man who finally

puts a wedding ring where they were is apt to find it slip off quite easily. The lady has tasted variety and monotony is apt to pall upon her somewhat. She has not now the long course of moral disciplining to aid her in overcoming impulses which, after all, are natural—at least we have been quietly teaching for several hundred years that they are *natural* in a man but quite improper in a woman except when directed towards her lawfully espoused mate. Prior to that, our ancestors (may their shades be blessed) believed that the woman should have no particular sex attributes (save modesty) and in some way, after a few generations of inhibition, a very large proportion of the mothers of our race didn't have much before or; quite often, after marriage. The race was taught bunk, fed bunk and ultimately deified bunk along these lines.

As a matter of fact, Marriage is more than the agreement of a virile male and unawakened female to mate, found a home and bear children. Marriage must satisfy the primal sex urge that is—despite authorities to the contrary—present to a greater or less degree in every normal man *and* woman. If the man finds his real mate in the woman he weds, he will not stray very far away from her and she will have no particular desire to wander in far pastures. But, when the woman has once had her sex sense fully aroused and has adventured along paths closed by custom to her forbears, she is going to be critical of any but her real mate—and here is the crux of the whole matter: there are many, many marriages but few real MATINGS. Further, the laxity of the connubial tie is generally laughingly spoken of. The movies depict it; up-to-date light literature dwells upon liaisons with languorous leniency and the young woman who tearfully tells a somewhat older woman friend that she thinks Hubby is interested elsewhere is told to go and do likewise. So, "by advice of counsel", she does. "What is sauce for the gander is sauce for the goose." Woman has long demanded, and now has, just the same privileges as the man. Unhappily, she is the only one who bears children and, having taken a man's name, she is, unfortunately, not quite adapted to do what a man may do with more or less impunity. Further, if the "leave-my-man-alone" instinct exists in woman, the male objection to anyone meddling with his female is infinitely more strongly developed—and if, for any reason, he is unable to batter the intruding sheik to bits, he will "hark back" and take it out of the woman.

Then, of course, we have DIVORCE. And, after careful study, one is forced to acknowledge that where the man or woman *can* love ardently and does not display that ardor to the lawful partner of their joys and sorrows (and cash), the sooner the twain are again split into units the better it is for all concerned. They both may yet "find the right other half". Anyhow, there will inevitably be more sorrow than joy in such a union. The untold number of miserable or just tolerable marriages passes computation. The number of divorces in some parts of the country is now almost even with the number of marriages. Something quite evidently is wrong and, until that is righted, Marriage will be regarded as being more or less of a limited lease—something which may be broken at any time the contracting parties become in *any* way dissatisfied. That means disaster for the simple reason that, in ninety cases out of a hundred, some form of dissatisfaction or friction is bound to occur within the first two years of wedded life. Those that give in to these storms and run for what they believe to be calmer waters are apt to find that waves and winds are wherever the bark of matrimony sails. I have been told that the happiest marriages (in these days) are those where both the man and woman have experimented, then talked very frankly and freely with each other and decided to trust—and cooperate with—each other permanently—but still not to ask *too* much. This may be called the "elastic union"; but, even here a suit may result.

The Marriage bond was more dependable when people were more religious—when the idea held that an unfaithful wife or husband was a SINNER. The fear of wholesome punishment (even though it be delayed) is yet necessary to keep most human beings in the straight and narrow path. If you like jam well enough to steal it and do steal it and get well spanked for so doing, you are not apt to steal it again—at least, not often. Your lips may pucker, your mouth water and your fingers twitch, BUT another part of your anatomy also begins to tingle reminiscently and—you back out of the pantry! It is not that you *would not* (No sir) steal jam, but you have found that the remote results are apt to be painful. The same applies in sex matters: the man or woman who really believed that a discovered lapse meant ostracism here and the certainty of very sharp punishment hereafter

"backed out of the pantry". Quite unwillingly, perhaps, and very slowly, but still jamless. Today, the anchor of real religion is dragging; people quite generally are believing that there *is* no Hell, no Devil, no Pit, and that, therefore, the only thing their derelictions could bring is punishment *here*. Moreover, they look about them and see jam upon numberless mouths, they hear of ministers revelling in jam and jelly—right in the very sanctuary—and they "take a chance". If their errant fancy after Marriage pictures someone else as much more delectable, they change partners and the world smiles brightly upon the new venture. Divorce becomes more general—more essential, perhaps—as we become more thoroughly educated and know more about ourselves and other people!

Some day, perhaps, we may reach such a state of enlightenment that the customs general in the past and about half accepted now will be regarded as most unnecessary and absurd. Frankly, I personally believe that we are rapidly approaching that point. Trial marriage, birth control, "pacts" and "close (sex) friendships" are undermining the Institution of Marriage at (to the conservative) a rather alarming rate. None of us able to view this thing judicially will live to see any generally acknowledged and drastic change, but youngsters now toddling may, ere their hair turns snow white, speak of the "old-fashioned marriage" as we speak of the plug hat.

Education along sex lines, followed by unrestricted intermingling of said sexes without supervision or inhibitions will NOT in any degree make Marriage more desirable; neither will it increase one solitary iota the chastity of the race. Reasonable sex education, YES. Proper guardianship of young impressionable girls, YES. Redrilling of boys and young men in the ethics of chivalry and protection of everyone's sisters, YES. Stupid stereotyped talks upon sex topics to young people, inquisitive and tremulous, without subsequent guardianship and lessons in chivalry respectively, and we are simply making narrow the way for Successful Marriage and broad the path to Irregular relations (to use a euphonistic term) and the Divorce court. What will happen along the lines depends very, very much upon what we *now* are going to do about it. We are bad enough, Heaven knows. But, there was Sodom, Nineveh, Rome—many extinct civilizations; they "went the pace" and perished from off the Earth. May it not be that too much laxity and laughter at laxity will ultimately loosen us also from the scheme of things—which probably is unchangeable?

Think this over and, if you and your wife differ seriously on the subject, you can get a divorce. The current figure is, I believe, $300.00, and up.

Pleasant dreams, anyhow.

[Orchestra breaks into the strains of "What If We Two Were Parted."]

IF solid happiness we prize,
Within our breast this jewel lies,
And they are fools who roam;
The world has nothing to bestow,
From our own selves our bliss must flow,
And that dear hut—our home.

—*Nathaniel Cotton.*

Let's Talk it Over

The Country Doctor

Faith, Hope and Charity

AT last, the graduation was over. Those years that had looked so long from the beginning, now that they were past, seemed like a dream. As the doctor looked back on those four short years, and forward on the uncertainty of the future, it just began to dawn on him that his college course had been the best days of his life. Now, he had the cold, heartless world to encounter and life assumed the indefinite. At this time of life, the doctor's motto was: Faith, Hope and Charity.

He examined critically the comparative case of the city life and the hardships of practice in the country, and chose the latter. He was filled with faith and hope, as he went about buying horses and rigs that the country physician of those days used. Buoyed up by the fact that he had a father and mother who were interested in his welfare and helped and encouraged him at all times, he seemed to take more courage at every turn. Oh, how unfortunate a man is who has not a father, mother and good wife to back him up, and to encourage him over the rough spots, especially in the beginning of practice.

Time went on and a certain amount of success came his way. The children that he helped to bring into the world seemed to be his, and he referred to them as his children. He took an especial interest in all their little ills; for, were they not his? All their family affairs were laid before the family physician like an open book, and his advice was courted. At this time, charity began to become manifested to a great degree. These children were all known to him and he began to love them.

The hand of time went on and, after a busy and strenuous day, he would stop, at the midnight hour, to put a patient to sleep who had a poor nurse and who was in pain; then, travel home and lay his head upon the pillow, with the feeling of a day charitably spent. Next morning, he arose and the telephone jingled. He was informed that his services would not be required at the place where he had taken the time to put the patient to sleep, for they had called another physician.

Ah, his first jar! The charitable emotions that he had had, the night before, all loomed up before him like an open book. The poor nursing and the poor show he had had in this case all flashed through his mind and he who had done the best he could, had worried and slaved, even waiting for his own rest until his patient was easy, had been cast aside. How small he felt at this hour. How fickle the world appeared from this angle. A sting was thrust into his soul—the ingratitude of people. From this first thrust, his soul never entirely recovered. A little hardening was the result. Although it was put from him and he surmounted it in time, yet, there was a wavering in his faith which he never entirely recovered.

One night, he was called to see James O. and found him in the throes of a severe appendicitis. Twelve hours later, he put him on the first possible train and took him to the hospital where he passed out as a result of a ruptured appendix. It was with sadness that the doctor went to the grave with the widow and five children that survived.

Seven months later, he was at the bedside of the widow as she was struggling to bring forth a child in remembrance of the departed dead. Oh, the sadness of that midnight hour while, amid tears and sorrow, she went through the pangs of labor! The doctor has often wondered if the dead ever know or understand the thoughts and impulses of the living. At this midnight hour, the husband was unavoidably detained, but the doctor was there. He was there to soothe the aching heart and wipe away the tears. His it was to hold out hope to this groping human when hope had all but been abandoned.

Still, the hand of time rolled on, and he

became one of the community. The school board could not be perfect without him. The county officials, and those seeking office, made a special effort to become the friend of the country doctor, for they knew what an influence he had in the community. When he visited the county seat, officials would stop their machines to shake hands with him and the boys in the garage would smile as they saw him drive in, for they knew that his wit and humor were soon to produce smiles of satisfaction.

But, the country doctor began to get restless. His cousin, the city physician, was riding around in his beautiful six-cylinder Weasel, while he dashed his brains against the top of a Ford roadster. The more he thought about it, the more dissatisfied he became, until at last, he up and moved himself and effects to the city, ignoring the supplications of his former clients.

It was then that he became acquainted with the possibilities of money-making. Where he had made and collected one dollar in the country, he now made three. His work was easier and, where he used to travel six miles to make three dollars, he now traveled a few blocks, over paving, to do the same. Night work began to be more frequent. Of course, he obtained more money for a night call than he did a day call; yet, an ever-increasing practice began to wear on him. His time was taken from his home and hardly one-third of his time was spent with his wife and children. He was now able to own and ride in HIS Weasel. It would purr just like the one he used to hear when he rode with his city cousin. His bank account began to increase:

BUT:—

When he used to drive through the farming community and see the grass grow, the crops bending in the wind, heard the soughing of the wind in the pines, the birds, the crickets, the katydids, and all nature in her versatility, he was softened. The smiles of the country folk meant something, for every smile came from the heart. When he took his dog and gun out in the woods, harmony was felt with all humans and all nature.

And, now, when he drives out, he is surrounded, on the right, by stiff, unbending buildings of stone, brick or wood; on the left, by the same thing; before him is the same thing and to the rear it is the same story; even the streets that he drives on are of unbending pavement. The handshake that he now receives is of far more value to him than formerly; for, it now means a few more "goat feathers," a few more dollars taken from him in a painless manner. The suave smile now means he is going to be done out of another clean thousand, until the poor country doctor begins to suspect every hand-shake and every smile. He begins to become stiff and rigid, like his surroundings. He and his family begin to drift apart. His nerves become on edge and, where he used to have a good disposition, now he begins to be somewhat of a crab.

He never knew just where his client stood and, ten minutes after he had left, there might be another physician on the way to take his place. He became aware that his practice would change entirely once about every six years. He would try to get the poor patient well without resorting to surgery, when along would come one of his brother surgeons and hustle him to the hospital to operate and JUST IN TIME, to the chagrin of the poor country doctor.

His six-cylinder Weasel now became a mockery, for he began to find out that he obtained more pleasure out of having his brains dashed against the top of the Ford. The garage men soaked him, when before there was a set price for all the work. He began to chafe and fume by the limitations of his fifty-foot by one-hundred-foot lot. He began to see the results of life in a flat. The children were brought up where nature was absent. He noted with sadness the young lady, eighteen years of age, who went into the country and asked if that animal was a sheep, never having seen one before.

He went to the theater and saw beautiful shapes all dolled up in paint and powder, with little or no clothing on. He heard the stale jokes propounded by the wearied actor and gazed with ennui at the parodies on life as thrown on the screen. He left the theater and went out on the streets and watched the young women taken in the automobiles by single and married men, to be whisked away into the darkness and night to God only knows where. Then he began to become alarmed. "My God, will either of my daughters ever be sitting in one of those autos to be whisked out into the darkness and returned to become a disgrace to the ones that have reared her?"

As a result of all this, the doctor's soul began to atrophy and shrivel up. His faith began to go down to the zero point. His charity was fast fading away; for, no one cared for him only for what service he gave

them. What good service was given them was not appreciated. His hope began to become greed; for what was there to work for but the cold iron men and his family! While in the country, he was a necessity to the community; now, he was only a unit, an entity, a number, so to speak.

He began to realize that city life was artificial; the inhabitants were stiff and formal like their surroundings. When they decided to eat, they rushed over to the grocery and swooped up some bread, and a few canned articles, to be taken home, opened with a can-opener and devoured in a hurry. The old-fashioned cuts and stews were not used, for they did not have time to cook them. The theater, and the auto were calling them, and it was all some of the women could do to get home in time to get the next meal ready. At night, the man of the house rushed off to the club, or some other place, and his wife drove out in the auto, leaving the children to shift for themselves. When he got home, his wife would not be there. Sometimes, in the still hours of the morning, she would come in, with apologies (or none). The next thing—divorce. And the sad part of it was that the children would be bereft of a home.

But, how refreshing it would be to the poor, country doctor when he would meet a man or woman with an honest-to-goodness smile that came from the heart, or a handshake that he could feel clear to the bottom of his heart. He felt as if he had found a green island in the sea, a beautiful oasis in the desert, when these people would say: "Doctor, sit right up and have dinner with us," like they used to do when he was traveling through the green fields and woods—and thought he was stuck-up if he did not do so. How he would sit down and enjoy the stews, home-made bread, real butter, and beans which he would eat with a three-tinned, wooden-handled fork. How, at this time, his Faith, Hope and Charity would ascend the scale toward the old mark it had attained when he left college to make his way in the world!

As a result of all this, the Country Doctor would sit down of an evening, place his head between his hands, and think, and think, and think. "I am in a rut. The cold, iron men are calling me, and also the green fields and fresh air. My six-cylinder is slipping along the edge of a frozen rut which is beginning to thaw a little. Will some solid substance come along to make a firm footing so that it can jump out of the rut? Will it slip back in for good, or will I discard the Weasel for a Ford which will jump in or out at any time or place?"

Which shall it be?

M. E. Bovee.

Port Huron, Mich.

ACNE, OR PIMPLES

That pimples are a loathsome and disfiguring bacterial disease, is recognized by everybody, both by those who are immune and those who are victims of this infection as an infectious disease. But, that this infection, which is a chronic pyemia, has undermined the constitution of untold thousands and that, through absorption of the septic material as well as the active organism, it is causing lesions in the kidneys, the liver and in the arterial system, is not often recognized even by the members of the medical profession and seldom by the laity.

In my own practice, I have had deaths from nephritis, and one from pyemia, due to an abscess in the musculature of the heart which was traced to one especially virulent colony of a mixed infection in an acne pustule in the inner aspect of the left arm, followed by a slight lymphangitis in the axillary glands and localized infarct of the septic material.

The disease is contagious; but, due to its prevalence, I doubt if it ever will be legally classed with the communicable diseases, and we are therefore forced by unavoidable circumstances to limit its ravages by instruction of the young people who do not resist the transfer of the invading organism by soiled towels, cloths, bedding or by personal contact with diseased individuals. The laity believe that it is a blood disease, and they are to a certain extent justified in this conclusion, as I have repeatedly found not only a mild leucocytosis in these patients, but occasionally a leucocytosis of from 12,000 to 14,000, under exacerbations of the disease.

Acne shows a proneness to attack the young in the period of life on the border line between childhood and adolescence. But, no age, from the cooing baby in the cradle to the grandmother, is exempt if the organism is of an unusual virulence, and the individual is not immune because of previous attacks or by natural selection.

Our first object is, to prevent the spreading of the infective organisms, which always are mixed, by instructing the patient and his or her friends to avoid direct transfer. An active immunity can in a large proportion of

cases be established by administration of immunizing doses of the appropriate vaccine and a local inunction of an ointment containing about five percent of sulphur; or, if this is objectionable, boracic acid, whereby the pores of the skin are temporarily closed against the implanation of the active organisms. Remedies used for treating the disease are legion, which is a proof that we are without any specific. But, notwithstanding that we have none, acne is a tractable infection and will yield to appropriate medication as indicated in individual cases. Of paramount importance is the general health, which ought to be the object of our first solicitude.

If the patient is undernourished or subnormal, increase of appropriate food intake is of the greatest moment. If the individual is overnourished and especially if of phlegmatic temperament with sluggish digestion, indicanuria; dietetic restrictions are necessary to effect a permanent cure or immunity.

Of the utmost importance is a rule for greatly increased water intake. As a rule, these people are almost abstainers from water, except in the form of tea, coffee and soda-water concotions. Instead of an intake of up a 2500 to 3000 Cc. of water, their average may not be over 300 Cc. and this decreases to a marked degree the normal metabolism of the food, especially the proteids, with subsequent retention in the system of unsplit proteid materials that are eliminated through the kidneys as indican and other waste products of an incomplete metabolism.

This food poison lowers the natural immunity, and the individual is readily infected when exposed to the contagion.

Pustules and other skin lesions are to be treated surgically, like any other septic infection, by first painting the area of the pimples with ¼-strength Tr. Iodine followed with an inunction of an appropriate ointment, the opening of the pustules, be they in the deeper layers of the skin or in the upper layers, with a sharp cataract knife, and evacuating the pus and serum, with gentle pressure into a swab of absorbent cotton.

The main point, is to prevent reinfection. This is accomplished by a mild iodized ointment, leading to the fatty covering of all openings in the skin.

This should be followed by a long exposure to the rays of carbon and iron arc lamp on a direct current, to a degree of active hyperemia. The ultraviolet rays destroy all the organisms on the skin. This is followed by an inunction of an ointment appropriate for the individual case, as for example yellow oxide of mercury, five percent in an animal or vegetable fat. Betha napthol is occasionally indicated, and sulphur in the great majority. After the surgical treatment of the pustules, the high-frequency current gives excellent results. At times, it may be too harsh from the vacuum tube, but the operator can remedy this by leading the current through his own fingers to any very sensitive area, especially near the temples and over the orbital nerves.

A remission of the disease will soon be in evidence, and the patient may delude himself into thinking that he is cured. However, the physician must emphasize the probability that the infective organism still persists in the deeper layers of the skin and that an acute relapse may occur following exposure to cold or by intestinal draught. This must be treated immediately so as to prevent reinfection and another relapse in some near or distant future.

Internal medication is of a marked benefit to all cases. The chronic cases show marked benefit from arsenic; the acute and subacute from alternating day's treatment with iodide of potassium and quinine in large doses, taken with liberal quantities of warm (not hot) water.

All treatments may be jeopardized by the use of water externally, for this liquid medium is the favorite for the dissemination of the acne organism.

For cleanliness of the infected parts, oil or face cream is to be recommended. It may be wiped off the skin with a soft cloth, avoiding the tearing open of any pustule.

An occasional hot bath may be permitted, but the pores of the skin must be immediately closed by an inunction of an animal ointment containing sulphur or some other appropriate antiseptic. Every garment that has been in contact with the pustules must be frequently washed in hot water and alkaline soap, and ironed.

With continued treatment, this disfiguring disease can be cured, but it requires fortitude by the patient and a close and careful attention to details of the treatment by the physician.

H. ENGSTAD.

Grand Forks, N. Dak.

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[We have often been impressed with the splendid results following the continued administration, to saturation, of calcium sulphide. In some selected cases, a course of yeast has been found effective. In all cases, sufficient elimination must be procured and

maintained; because, as our contributor says, the resistance against this infective virus is greatly lessened by autointoxication of intestinal origin. The treatment, always, is properly inaugurated with a course of calomel, podophyllin and bilein, followed by a saline laxative. Then, intestinal antiseptics should be administered, of which none is more persuasive than calcium sulphide. Acne is one of those persistent, obstinate affections that result will justify all sacrifices demanded of the patient.—ED.]

MANAGEMENT OF ABORTIONS

In the May issue of this good journal, Dr. R. J. Smith, Colorado, shot a good bolt at one of the real issues of medicine and surgery, and I feel urged to give a hint or two.

One afternoon, I was called to a place, about two miles out, and found a young married woman who had been to the city a few days before and had an abortion performed at the three-month period. She was told that she would be all right; but, when I saw her, she had a temperature of 105° F., very much abdominal pain, foul discharge, and had vomited some. I gave a douche of warm permanganate of potash, 1:3000. Then, with a gauze packer, I filled the uterus as full as I could, with a plain sterile gauze strip. This produced painful uterine contractions, but was left for fifteen or twenty minutes and then slowly removed. Its meshes were filled with débris. This was followed by an intrauterine return-irrigation with the permanganate solution and the plain-gauze pack repeated as before and allowed to remain about the same as before. After removing the plain gauze, I packed the uterus with a strip saturated with a solution consisting of: phenol, 3 ggt.; tr. iodine, 3 dr.; glycerine, q. s. ad. 1 oz. This was left over night. I left some tablets (acetanilid, 2 grs.; quinine, 1/2 gr.; camphor monobromate, 1/4 gr.; podophyllin, 1/40 gr.; aloin, 1/16 gr.; aconite, 1/20 gr.; capsicum, 1/4 gr.; atropine, 1/2000 gr.) with instructions to give one every two hours.

Next morning, the fever was 100° and the pains all gone except what was due to uterine contractions; the bowels had thoroughly cleaned out. I repeated the treatment I had given the evening before and left the uterus virtually clean. The next day, the patient was feeling well and was able to come to the office for a few treatments which I deemed necessary before dismissing her as out of danger.

Not long after this, I was called, at two o'clock in the morning, to see the sickest woman I had ever seen in a like condition. I found a married woman, about thirty years old, with a temperature of 106° and all of the symptoms of general septicemia, and a dead fetus at five-months' pregnancy. Five or six days before, her husband, in a drunken fit, had kicked her in the abdomen, and what I found was the result.

I could not handle such a case alone; so, I told them what to prepare and that I would be back as soon as daylight with another doctor and that I would do what I could to save her. As soon as possible, she was given a general anesthetic and, with my hand, I removed the fetus after a great deal of effort.

While working for the placenta, it seemed her fever was high and my assistant found it to be 109° in the axilla.

After removing all I could without injury to the uterine wall, I packed well with the iodine preparation mentioned above, ordered the same tablets one every hour, until I returned. In the evening, I removed the pack, irrigated with the permanganate solution and repacked.

This I repeated every day for three or four days and, to our great surprise and pleasure, this patient recovered as quickly as the one mentioned before.

This was the highest temperature either of us had ever seen, with recovery. The case was seen in a town of 5,000, but the surroundings were as bad as any slum case, and it was charity. The treatment has not failed me in twenty years. It is safe and effective.

In 1914, I was assistant in an eighteen-hundred-patient asylum and a friend of mine was superintendent of a neighboring city hospital. He came to the asylum, often, to bring insane patients from his city. On one occasion, he seemed unusually depressed and I asked the reason. He told me that, when he became superintendent of the hospital, there were several deaths every month from abortions and that, in the week, there had been one a day, and it distressed him. He said, the treatment for a long time had been to douche and curette the patient as soon as possible after reaching the hospital, and it seemed that everything that could be done was done. He was much surprised when I told him that if he would just put them all to bed and let nature take its course, he would have better luck. I gave him an outline of the treatment described above and suggested that he throw all of his curettes away, at least to allow no instrumentation whatever. About a year after

this, he wrote a very interesting paper on the non-surgical treatment of abortions and reported that the number of deaths was less than one in twenty, whereas it had been almost the reverse with the former treatment.

AMOS T. FISHER.

Lakewood, Ohio.

EMETIME HYDROCHLORIDE AS AN ANTIHEMORRHAGIC

Cephaelis ipecacuanha was first discovered in the seventeenth century and was at that time used for dysentery. Its native habitat is Brazil. Its pysiological action is, irritation of the pneumogastric nerve and, through it, the organs it supplies, increasing their secretions. Its action is particularly severe on the stomach where it produces intense and persistent nausea, retching and vomiting. It has been used since the time of its discovery to produce emesis and, in small doses, to cure it. Its active principle is emetine the use of which has been varied.

A lethal dose of emetine will produce paralysis of the muscles of respiration through the vagi. The drug is eliminated by the gastrointestinal mucous membrane and is found in all secretions. Bass and Johns recommended it for the entameba which is destroyed in a solution of 1:10,000 and which accompanies pyorrhea. It has previously been used for amebic dysentery.

The newer use of emetine is for hemorrhage, although the crude drug has been used by the Homeopathic profession in small doses for capillary bleeding, for many years. They could not employ it for the more severe hemorrhages because they could not give it in sufficient doses by reason of its emetic qualities. With most of these removed in the production of emetine hydrochloride, we can now use it in large doses and for very severe hemorrhages from any portion of the body, except the large vessels, and its action is manifest within a few minutes if given intravenously.

For capillary bleeding, emetine can be given by mouth or hypodermically; but for serious bleeding it must be given intravenously in minimum doses of 1 grain of emetine hydrochloride. It may be repeated in twelve hours if necessary, although usually the interval is twenty-four hours, and the dose should be repeated daily for three to six days. It makes but little difference whether the bleeding comes from a pulmonary lesion, a gastric ulcer, a fibroid uterus, a papillomatous bladder, a carcinomatous area or from a simple injury, and the remedy is used with equal success for epistaxis.

Following electro-coagulation of malignant growths, it is indispensable to control the hemorrhages that sometimes occur when the slough separates, and we use emetine to control the bleeding of hemophiliacs.

For children, the dose must be gauged according to Young's scale for the various ages, but for the average adult we give 1 grain intravenously and repeat every twenty-four hours for three to six days, although occasionally we repeat in twelve hours, and we have given it up to 3 grains at a single dose, although 1 grain is usually sufficient. Bleeding usually lessens in a few minutes, with complete cessation of all oozing in a few hours. If emetine hydrochloride is used, there is seldom any nausea and, when present, it will subside in a half hour's time. There is no remedy in use today that is superior to emetine and none to our knowledge that even equals it as an antihemorrhagic.

T. HOWARD PLANK.

Chicago.

"SUGGESTION—OR MENTAL THERAPEUTICS"

I shall state at the beginning of this article that I have been a practicing physician of rational medicine for thirty-three years and have an abiding faith in the efficacy of drug medication. When I graduated in medicine, I honestly thought that about all that could be accomplished in treating the ills of the human body must be done with drugs and surgery. Since then, however, I have changed my mind. For, observation, investigation and experience have taught me that there are some other efficient means of treating disease besides drugs and surgery, namely, electricity, massage, change of climate and diet, rest, suggestion or mental therapeutics, etc. It is the latter agent, suggestion, that shall claim my attention in this paper.

By suggestion, I mean the fixation of an idea or thought on the mind, by any means, direct, implied or incidental. I think that suggestion must have had a place in treating disease as well as drugs in the remote time of King Solomon, for that wise King said, "A merry heart doeth good like a medicine, but a broken spirit drieth the bones." Of course, the merry heart had reference to a happy state of mind; a broken spirit a depressed mind or melancholia. If it is true

that a merry heart doeth good like a medicine, the question naturally arises, how does it function in order to take the place of medicine? This I shall answer later.

Psychology teaches that man has two minds, objective and subjective. The objective mind has to do with the voluntary acts of life and is controlled by the will. The subjective mind is automatic and has to do with the functions of the body, such as keeping the heart beating, and respiration going all the time. It attends to digestion and assimilation of food, growth and repair, etc.

There seems to be a mutual interchange or cooperation between these two minds whereby one can impress the other. Bad news or depressing influences that affect the objective mind also interfere with right functioning of the subjective mind, such as curtailing the appetite and digestion, for instance. Such causes doubtless derange more or less all the functions of the body. Every mental impression is registered in a physical effect. That is how a merry heart doeth good like a medicine and a broken spirit drieth the bones. I shall now give a few examples to illustrate this point:

I was once called to see a woman for whom I had injected some hemorrhoidal tumors the previous day. When I reached the bedside, she was suffering much pain from the effects of the injection. I asked her if she had ever taken any morphine, and she said that she had not. I thought I would work a clever piece of deception on her, with the mental reservation to use a dose of morphine later if my ruse failed to accomplish the desired result. I asked for a glass of water and a spoon and purposely let her see me place a morphine tablet in the spoon. I then removed the morphine without letting her see me do it. I got her interested in the efficacy of morphine to relieve pain and in how rapidly it would do so. I then injected a little plain water into her arm, opening my watch and telling her that she would be entirely free from pain in one minute. At the expiration of a minute I remarked: "Your pain is now gone and gone for good." She admitted that I was right and had no further trouble according to my prediction. My confident assertion had given her a merry heart and had done good like a dose of morphine. That was veritable proof of the truth of Solomon's proverb.

Some people can be cured of physical diseases by mental impressions. That is the way the ignorant plantation Negro with his rabbit foot sometimes makes genuine cures of diseases, and the same is true with socalled Christian Science cures and faith cures. They are made by suggestion and suggestion only. I have controlled the pain of toothache and headache by placing my hand on the jaw or head and making the patient believe that I was transmitting some magic power from my body to their body that could and would stop pain. Should I give in detail all my experiences, in this line of work that I have done, it would require several articles the length of this one. However, I shall cite one other case of mind cure that is of more than ordinary interest.

More than twenty years ago, when I was practicing medicine in Bowling Green, Ky., a father brought his son to me to be treated for catalepsy. I knew all of this man's family, who were of a highly nervous temperament. This lad was fifteen years old, undersized for one of his age and poorly nourished. For several years, he had had cataleptic attacks that manifested themselves by flexation of his arm or leg upon itself and the limb would become instantly rigid with cramp or spasm. These spells would come on him without any apparent cause and would last for an indefinite time before relaxation would free them. He had been treated by several different physicians of the city with drugs, but without benefit. I concluded that I would try suggestion on him, while he was in a hypnotic state. I asked him to lie down on my operating table and look at the point of my forefinger, as though I wished to test his vision; then I requested him to close his eyes and said to him, "Go to sleep." He immediately commenced snoring in a real hypnotic sleep. I proceeded in this wise to suggest to him: "Jimmy, I am very glad you have come to me for treatment because I can cure you very easily. Your nervous system is a little out of normal condition and your subjective mind can and will soon have every disorder corrected. Your appetite will be good and you will digest and assimilate your food well and will grow large and robust. You will not have any more cramps in your legs and arms. You will sleep well every night and you will be very happy all the time, because you will be as healthy as anybody." I made these suggestions to him twice a week for several weeks and dismissed him from any further treatment.

A few days after I commenced treating him, he had one attack of cramp and only one. When he first came to me for treatment, he weighed seventy pounds; he soon showed

rapid improvement physically and, within a year, gained forty pounds in weight. I lived in his town for several years after I treated him and, if he was ever sick in any way, I did not hear of it. Perhaps this boy could have been cured by medicine if the right drug had been administered. I do not know.

I observed one interesting phase of psychic phenomena in this lad during the time I was treating him. He would become clairvoyant and could tell me the time of day to the exact minute by my watch, with his eyes closed, while I was standing behind him. He could also tell what was in my closed hand in my pocket, such as a knife, a coin or a key. On one occasion, when this boy came for treatment, Father Hayes, a Catholic priest, was in my office and I invited him to observe some of the psychic phenomena in this patient as described. He heard him tell me the time of day to the minute by my watch and also name certain articles enclosed in my shut hand which I had taken from my pocket. So, the priest essayed to test the boy himself; he held a small bundle in his hand that was wrapped in a piece of newspaper. He said to the boy, "What do I hold in my hand?" But the boy slept on and paid no attention to him. I asked the priest to give me the bundle and I would make him tell the contents of the bundle; he did so and I asked what I held in my hand, and the boy said "a paper." I had no idea myself what was in the paper. I said, "Yes, but what is in the paper?" He replied that it looked like candles. The priest then undid the bundle and exhibited three wax candles about nine inches in length.

During the state of hypnosis, the objective mind is in a state of abeyance and there is an open, unobstructed road to the subjective mind. That is the best possible time to make suggestion, but all people are not equally amenable to hypnotism and suggestion.

I have had many people so completely under my suggestive control that I could have rendered life extinct in a few minutes by commanding the heart to cease beating or respiration to cease. I have made patients so rigid that they could not be bent any more than if they were frozen. I have also relaxed them so that they would fall out of a chair. I have blanched their features and made them blush at my bidding. I have made them sneeze, which cannot be done voluntarily. The thing called habit is only subjective attention that causes one to perform some act or thought in the same manner at given intervals. As the subjective mind never sleeps or becomes unconscious and is made aware that something is to be done at a fixed period, it uses some method to do it, and we call the thing which is done habit. It knows things intuitively; it is the spirit of life. I have long since ceased to hypnotize anyone, as I believe it is morally wrong. I think it is witchcraft, which is forbidden by Almighty God.

"As a man thinketh in his heart, so is he." The power of mind over body was understood as far back as the beginning of Jewish ancient times. Jacob, the grandson of Abraham, entered into a contract with his father-in-law, Laban, who agreed to give Jacob all of the spotted and ring-streaked cattle and sheep as his share for taking care of the flocks and herds. At certain breeding seasons, Jacob placed sticks with spots and stripes on them before the flocks, that caused the marks on most of the animals born to be the property of his own. This trick soon became apparent to Laban and the contract was cancelled. This was not the first questionable transaction of Jacob's, as he had previously cheated his brother, Esau, out of his birthright. I merely mention these things to prove my contention of the power of mind to influence psychical conditions of the body.

Although this story has been truthfully told, no doubt it will be adversely criticized by some, and no doubt it will be viewed more charitably by others. I have tried to show that like therapeutic results may be produced by methods that differ greatly in their character. No therapeutic measures, however, are worth any more than the clinical results that they yield.

A Baptist minister once came to me for treatment of an epithelioma on his face. He stated that he had been cured several years previously of a like growth on the opposite side of his face, by a woman faith doctor, and showed me a scar of considerable size. I asked him how she did it; he said that she looked at it and predicted that it would soon be cured. And that was all she did. He further remarked that the growth sloughed out in a solid lump and that he had preserved it for several years in alcohol. I said to him that, if this doctor could make such easy and painless cures, then why did he come to me for treatment? Hers was better work than I could do. He replied that he would gladly have gone back to her for another cure, but that she was dead. I treated the place on his face with zinc chloride paste and cured it. I will say that I believe, this man was cured

just as he claimed that he was. I shall give my theory of how it was done, to-wit:

The subjective mind of the faith curist was in rapport with the subjective mind of the minister and caused the minister's subjective mind to send out certain impulses that caused a spasmodic closure of the blood and lymph vessels that supplied the cancer growth with nutrition; and the growth was starved to death and was removed by sloughing. To starve a cancer, the surgeon ligates the blood vessels that supply the growth. The only difference between the two is, that the subjective mind does better work than the surgeon.

An interesting case: A brother of the writer, some time ago, was severely bitten by a watch-dog, on the calf of his leg. The wound was attended to by a good surgeon, but it could not be made to heal despite his best efforts. A year passed and still the wound was in no wise improved. My brother then went to see a faith doctor. He said, the doctor was rather indifferent looking in his appearance, and ignorant. He looked at the sore leg and remarked that it would get well soon. My brother said that he did nothing for the leg but, in three weeks, it was entirely well. How was this cure accomplished? Well, I take it that the subjective mind of the faith doctor got in touch with my brother's subjective mind and probably sent antitoxins to the sore that destroyed the microorganisms in the wound which left it a simple disinfected wound, and it then healed like other wounds do. This theory may or may not be the correct solution of the matter. I am only surmising.

To make myself better understood, I will go a little deeper into the psychology of some things touched upon in this paper; namely, the abolition of pain, for instance. The animal organism is endowed with five different mediums by which impressions are carried to consciousness for interpretation. These mediums, called special senses, are feeling, hearing, seeing, smelling and tasting. Take an apple in the hand, when the eyes are closed, and, through the medium of a trained touch, a certain sensation is conveyed to consciousness that says, it is an apple. Place the same apple before the eyes, and the same impression is carried to consciousness and it again says, apple; and just so with the other three mediums. They all convey impressions that consciousness interprets as apple. It is the mind, or consciousness, that understands and not these physical organ called special senses. The eyes do not see any more than any other member of the body. In dreams, while the eyes are closed in sleep, objects are seen as vividly as when the eyes are open in waking hours. That is proof that it is the mind that sees and not the eyes.

Now, in order to still further add proof to my argument, I will revert to the patient who was suffering with inflamed hemorrhoidal tumors. My statement to the patient, that her pain was gone, did not instantly do away with the inflammation of the parts involved or wound. Consciousness simply accepted my statement as true and would no longer receive the messages brought to it by the sensory nerves. Hence, no recognition, no pain.

GEORGE N. MURPHEY.

Paducah, Ky.

SOME VALUABLE TESTS

Abelin for Salvarsan in Urine

Acidify 7 Cc. of urine with 5 drops of diluted HCl, cool and add 3 drops ½-percent sodium nitrate solution. Add a few drops of this mixture to 6 Cc. of a colorless 10-percent solution resorcinol-made alkaline with sodium carbonate. A red color indicates salvarsan.

Alfraise for Detection of Iodine

Treat liquid for examination with 1 drop of the following: 10 Cc. of starch paste (1:1000) are added. 1 Gm. potass. nitrite and 1 drop HCl. With iodine present, a blue color is obtained.

Aliamet for Copper Salts

To solution to be tested, add 2-percent pyrogallic acid and a cold saturated solution of sodium sulphite, equals an intense blood red color with copper sal.

Allen for Detection of Phenol

Two drops HCl and 1 drop HNo_3 are added to 2 drops of specimen. With phenol, a cherry red color is obtained on heating.

Alpers for Detection of Blood

Equal volumes of a mixture of tincture guaiac and oil of turpentine are added to the solution under examination; shake; a milky liquid turns blue. The blood solution must be concentrated.

Berzelius for Detection of Proteins

Fresh solution of metaphosphoric acid precipitates proteins from aqueous solutions.

Blarez for Detection of Coaltar Colors in Wine

Shake 20 Cc. of wine for 1 minute with 5 Gm. PbO_2 and filter. Coaltar color remains, natural color disappears.

Boas for Hydrochloric Acid in Gastric Juice

Dissolve 1 Gm. of resorcinal and 3 Gm. of sugar in 100 Cc. of 5-percent alcohol. Mix 5 drops of liquid to be tested with 5 drops of solution previously prepared and evaporate. If HCl is present, a red coloration ensues.

Brautigam-Edelmann for the Detection of Horseflesh

Prepare a broth of the specimen and test with a potassium solution of iodine; equals a bordeaux red with horseflesh.

Azeneuve for Coaltar Dyes in Wine

Pure wine when shaken with yellow oxide of mercury yields a colorless filtrate; a colored filtrate indicates coaltar dyes.

Contejean for Free HCl in Gastric Juice

Dissolve freshly precipitated cobalt carbonate in specimen, a red color changing to blue on evaporation indicates free HCl.

Cutola for Detection of Cellulose

A 50-percent hydriodic acid solution containing iodine colors cellulose blue.

Daclin for Santonine in Urine

Shake 10 Cc. of urine with 5 Cc. of chloroform; allow this mixture to separate; decant the chloroform layer; evaporate this at a gentle heat; treat the residue with two drops of pure H_2SO_4. A violet color indicates santonine.

Donogany for Blood in Urine

Add 1 Cc. of ammonium sulphide and 1 Cc. of pyridine to 10 Cc. of urine. With blood, the liquid becomes reddish brown.

Eber for Tainted Meat

To a fragment, add a few drops of the following reagent: 1 part HCl, 3 parts alcohol, and 1 part ether. With unsound meat, a white turbidity will form at the juncture of the liquids.

Ehrlich Diazo Reaction

Mix 10 Cc. of urine with 10 Cc. of a 5-percent solution of sulphanilic acid aud 5-percent HCl (U. S. P.). To this add two drops of ½-percent sodium nitrite solution. Shake with an excess of ammonia. Pathological urine gives a carmine red or scarlet color; normal urine gives a yellow color.

Esbach for Albumin in Urine

The reagent consists of 10 Gm. picric acid, 20 Gm. citric acid, and 970 Cc. water. A yellow precipitate indicates albumin. By using an Esbach urinometer, we can obtain a quantitative estimation of albumin in urine.

Focker for Uric Acid in Urine

To urine previously rendered alkaline with sodium hydroxide, add a solution of ammonium chloride, A precipitate of acid ammonium urate ensues. This may be separated and weighed.

Gannther for Detection of Blood

H_2O_2 liberates oxygen when brought in contact with blood.

Gautier for Egg Albumin and Blood Albumin

To 2 Cc. of the solution under examination add 10 Cc. of the following reagent: 125 Cc. sol. sod. hydroxide, 25 Cc. $CuSO_4$ solution and 350 Cc. glacial acetic acid. Egg albumin equals a flocculent precipitate; blood albumin gives no turbidity at all.

Habermann for CO in Air

CO reduces an ammoniacol solution of silver nitrate.

Hager for Detection of Cholesterol

A red color is produced when sulphuric acid is added to a chloroformic solution of cholesterol.

Heller for Blood in Urine

Heat the urine after rendering it strongly alkaline. In the presence of blood, phosphates colored red by hematin are precipitated.

Hoppe-Seyler for Carbon Monoxide in the Blood

Mix the blood with an equal volume of strong sod. hydroxide solution. A bright red color slowly forms and changes to greenish brown.

Lechini for Blood in Urine

10 Cc. of urine are treated with one drop of acetic acid and 3 Cc. of chloroform. With blood, the chloroform layer becomes red.

Legal for Acetone in Urine

Treat the urine with 10 drops of 10-percent sodium nitroprusside sol. and then add 2 drops of potassium hydroxide sol. With acetone a red color is obtained.

Nylander for Dextrose in Urine

The reagent consists of a solution of 2 parts bismuth subnitrate, 4 parts potassium and sodium tartrate, 100 parts 8-percent sodium hydroxide. A urine containing dextrose becomes black.

Obermayer for Indican in Urine

The reagent consists of strong HCl and 2-percent ferric chloride sol. To 4 Cc. of urine add 4 Cc. of the above reagent. Then shake with 1 Cc. of chloroform. After standing a short time, chloroform layer turns blue if indican be present.

Riegler for Formaldehyde in Milk

Dilute the milk and shake with phenylhydrazine hydrochloride and sodium hydroxide sol. In the presence of formaldehyde a pink color is obtained.

Schaffer for Nitrites in Urine

This is a very sensitive test 0.000045 Gm.

of N_2O_3 in 100 Cc. can be detected. Decolorize 4 Cc. of urine with animal charcoal and add to it 4 Cc. of 10-percent acetic acid and 3 drops 5-percent potass. ferrocyanide sol. An intense yellow color ensues if nitrites be present.

Schiff for the Detection of Uric Acid

An alkaline sol. of uric acid reduces silver nitrate giving a black deposit.

Smith for the Detection of Biliary Pigments in Urine

One drop of tincture iodine added to urine gives a green color if biliary pigments are present.

Uffelmann for Lactic Acid in Gastric Juice

The following reagent gives a yellow coloration in the presence of lactic acid: 1 drop ferric chloride sol. with a sol. of 0.4 Gm. phenol in 100 Cc. of water.

Weyl for Detection of Creatinine in Urine

When urine containing creatinine is treated with a dilute sol. sod. nitroprusside and sod. hydroxide, a ruby-red color results.

Zwenger for Detection of Cholesterol

A crystal of cholesterol with five parts sulphuric acid and one part water gives a red ring changing to violet.

DAVID LESCHKOWITZ

Brooklyn, N. Y.

IODINE FOR THE ITCH

A cleanly way of treating scabies is the following: Have the patient, standing stripped in the bath-tub, apply a heavy lather all over the body, using brown laundry soap, such as Fels Naptha. The lather is then to be rinsed off thoroughly and the skin dried. This process removes such mites as are migratory on the skin at that time.

Next, to destroy the eggs in the burrows, the skin should be painted with a mixture of equal parts of iodine tincture and tap water, freshly mixed before each application. A flat camel's hair brush, about half an inch wide, such as can be purchased for ten cents at an artists' supply shop, makes the task simple. It is futile to paint only the eruption, as there may be some of the parasites free on the skin. For instance, if there is scabies on the arm or hand, the entire arm or hand must be painted. If there are a few spots on the thigh, the entire thigh must be painted. The same is true of the back or chest. The treatment may be applied twice a day to the same areas. If the entire surface of the body is infested, it would be well to paint half of it in the morning and the other half in the evening. Three to seven days completes the cure.

If the skin is uncomfortably dry after the application, it may be bathed off and cold cream or vaseline applied. The effect is accomplished in the first few minutes of the application. On most skins, the stain does not persist after a bath. There is nothing about the treatment that is offensive, as there is in the use of sulphur ointment.

CORA SMITH KING.

Washington, D. C.

ARTIFICIAL PNEUMOTHORAX

I have been very much interested in the letters of Dr. Dungan, in the matter of artificial pneumothorax; especially the last letter, on page 321 of the May number, entitled "The Technic, Indications and Contraindications for the Use of Artificial Pneumothorax."

Dr. Dungan is an extremely interesting writer and his articles are well worth reading. His enthusiasm in the matter of artificial pneumothorax is based on good results obtained.

I would advise a large degree of caution in this method of treating tuberculosis. There are many things to be taken into consideration before artificial pneumothorax is started. For, once it is begun, it has to be continued over a very long period of time, often running into years. Then, too, the financial condition of the patient must be thought of, for it costs money to get "air." Also, it can not be obtained in every place, and some patients may have to travel long distances for this purpose, every week or every two or three weeks, or at longer intervals.

Here, at the Modern Woodmen of America Sanatorium, we use it very often, but always with a great deal of caution and care in selecting the cases; for, it must be known that not every case, not even every one-sided case, is suitable for pneumothorax. We use it in hemorrhage, with good effect. For the general betterment of the patient, we only administer "air" to those patients that are not doing well without it. Take a patient that is getting along nicely; there is no particular reason to give him artificial pneumothorax. But, in the case of one good lung, or one fairly good lung, if the patient is at a stand-still or has not gotten along well, the collapse and compression of the diseased lung, placing it at absolute rest, works great good to many, many cases. Even if the other lung is involved to some extent, it will become better through the administration of "air" to the diseased one, by ridding

the system of much of the infective process through the collapse.

Dr. Dungan gave a good description of the method of administration. I am wondering if this Dr. Dungan is the same Dungan I knew 'way back in the 90's at Cotner. If so, "Hello, Dungan."

H. H. SCHULTZ.

Woodman, Colo.

THE GENERAL PRACTITIONER

All the furor and cry anent the passing of the general practitioner seems to me to be a little premature and far-fetched, but will, no doubt, do good in bringing light to bear on some of the phases and manner of life of the man who is the foundation, the first and the second story, of the grand edifice called the medical profession. Without him, there could be no such thing as a medical profession. The surgeons, specialists, consultants, would have little to do. It is placing the cart before the horse to say that the surgeons, etc., are the medical profession and that the more humble general practitioner is a Lazarus at the table. That he is passing into oblivion, is all tommyrot. He is more in evidence now than ever. Certainly, he is a necessity in the smaller towns and forms the bulk of the profession in all cities. That some towns and communities do not support a good doctor, is true, especially in the eastern and some of the great grain states. In the intermountain states, the general practitioner dictates the policies of the profession. He is a man of authority and holds an enviable position. If he properly develops his opportunity for Service, he has nothing to worry about but rent and taxes.

In one of the articles on the passing of the general physician, it was stated that many eastern communities were ten miles from a doctor. In the west, doctors drive 25 to 50 miles frequently, 10 miles is an average trip, and the fees are collectible, some time. The ranchers may not be able to pay cash always, but they pay. Fees are higher in these intermountain regions and those able to pay cover a part of the debt of those not so well able to do so. That is right and proper.

These long drives are a hardship, many times. One who thinks that they are always tasks should not try country practice unless he can learn to govern his moods. A smile and a song make the miles short. The car does it anyway. The pleasure of service helps to make hardships lighter. And, if one delights in giving service, the appreciation of that service is enhanced. There are advantages and disadvantages in practice anywhere. There are joys and sorrows, pleasures and pain, in city as well as in town and country practice. One would think, to hear some of the heartrending tales of the life of the poor country doctor, that he lived in some terrible place without any of the conveniences of life and none of the amenities. One gets these conveniences as one desires. Most towns have modern homes. They have electric and water service and bathrooms. There are lawns and trees, gardens. The mountains are one immense park with lakes and streams, even if the town has no park. The people are ready for fun and appreciate the efforts of their neighbors to bring play into their lives; more so than in larger cities where amusement runs wild. We are not blasé in these towns, nor passé!

Professionally, one meets with cases much as one gets in cities; few epidemics, unless influenza rages; three or four obstetric patients a month; some surgery, major about ten or fifteen annually, minor including tonsils, ten to twenty annually; a little rheumatism, office calls for prescriptions for coughs and colds, a great many; and one has plenty of time for short trips into the hills on a fishing or hunting expedition, or one can go to a neighboring city for a day or two and get a little relaxation. For a longer vacation, such as I took last summer, one engages a locum-tenens and is foot-loose.

In such an epidemic as we had in 1922, a return of influenza, there were perhaps 400 or 500 cases with 25 or 30 pneumonias without a death. That was a busy time. Twenty hours a day in winter, driving like mad! Not so bad in a closed car, even at 15° below! One does his best and then sleeps the sleep of the dead! After three months of this, one feels like taking a vacation for a few days, if opportunity offers. At least, one appreciates the dull times more. There are a few cases of pneumonia every cold season. It is a mistake, I think, to assume that pneumonias in high altitudes are more fatal. They get all the oxygen they can absorb. They seem to do well with good nursing, a few doses of the defervescents, some quinine and, of course, the preliminary cleanout.

This winter, there was quite an epidemic of nasal and sinus infection, following mild flu. A few cases of pneumonia developed, one or two severe; all recovered. There have

been several deaths due to accident, none from acute illness in two years. The climate MUST be fine! It is a fact that only the aged die here.

What do we do with our leisure time? Oh, we read a great deal, medical and other magazines, books new and old; dance, play cards, bridge, Mah Jong, play basketball, volley ball, tennis, baseball, golf, go fishing, drive to any of the beautiful canyons, make garden, wrestle with the lawn mower, go for walks to neighboring mines, talk to the ranchers about prospects. There is no time to mope or worry. Then there is the wife. She is wonderful—always! Cheerful, sane, a good mixer, even tempered, fine housekeeper. That is a description of all doctors' good wives. Or it should be! A doctor cannot afford to have a gossip in his household. And then the kiddies—— God bless them—— I have none! What would we do without them, in the house, or in our neighbor's house? A little mother with the sweetest baby with five teeth was just in, baby had swallowed one or more large beads from a broken string of beads. Anxious, of course. Reassured her. Told me all the little tricks of baby. These little mothers think their doctor, who may be any doctor, a wonderful man. Makes one feel that he is doing some good some time. If we could size up to what our patients—some of them—think of us! I would hate to try to size down to what a disgruntled patient thinks of us.

A baby has the croup. Calcidin and emetine in hot solution. Relief and a happy mother. Gratitude—a rare article—does make the world brighter. Suppose our patients do forget easily. Their pleasure, their joy, their happiness, that is reward fit for kings, evanescent though it may be! The only real happiness anyway is the good deed done without thought of return. It is what is born inside us that counts.

A young girl with rheumatism and a valvular defect. Bad tonsils. An operation performed in the office, with the wife and two home-trained assistants helping. In a few months, there is great improvement. Another good booster.

Neocinchophen in an acute rheumatism did great work.

In the matter of major surgery, it has been my habit to take the patients to a nearby hospital. Frequently the call comes at night, perhaps a ruptured appendix. In three of these cases, with a drive of fifty miles, the patient did well and recovered in due time. With a small hospital here, one could do these operations without the added risk of a long auto trip.

This is just a little bit of history from

Out in the west where the columbines flames
And the red earth gives a state its name;
Where the beautiful peaks of the Cristo rise,
And the Wet Mountain valley its people prize:
Here the sun shines brighter,
And the men are righter
And the women are all the climate may claim!

RUSSELL J. SMITH.

Westcliffe, Colo.

DIET IN MALIGNANCY

As Dr. Bryce has given to your readers a very interesting account of his personal doings and especially his experiences during that summer vacation on his farm, the article suggested to me the idea of some personal experiences of my own with reference to dietetics that might be of interest.

As you probably know, I left Chicago to come to Texas in the winter of 1911, at which time Dr. Candler said to me: "Doctor! The move is a good one, it will add ten years to your life"; and I am now wondering when that ten years is to commence, as my friends here say: "You look no different now, barring the loss of your teeth, from what you did when you first came." I was then 72 years young, as my late friend, the Autocrat of the Breakfast Table, used to say of himself.

It is not out of place here, to say, that I have done some work in this section, that this work has been recognized by my election as an honorary member of two county Medical Societies and that I am greeted professionally and socially by leading men in San Antonio and elsewhere. I do not say this boastingly but in all modesty. I did not come to Texas for medical honors, but to get rid of northern winters.

However, all this has nothing to do with dietetics; consequently, I will turn my pen in that direction and say that, in May, 1914, I noticed a small growth upon my tongue and which I diagnosed as a sarcoma. I knew that this must be removed promptly if I was to save myself from much suffering and a "premature" death. On the 12th of July, 1914, I left this burg for Chicago and, three days later, on July 14, I was on the operating table in Augustana Hospital and just coming under the influence of the anesthetic, when I heard one of my Doctor friends say, "Poor old Doctor, this is his end." I remember shouting "not on your lives," when oblivion obtained and the next that I knew, Dr. Ochsner, who operated, was saying, "You may take him to

his room." I learned later that one hour and twenty minutes had elapsed in the interval. I recovered without an untoward symptom and left the hospital after ten days.

I found it necessary to have all my teeth removed, as most of them were artificial and not as smooth as they might be, being on bridge work that had been in use for some years.

All of this leads to dietetics. How was I to be nourished? When I left the hospital, I weighed 110 pounds, a net loss of 50 pounds in ten days and, to regain this, without teeth, was a question.

Before beginning on a regular diet, it was necessary to experiment and this led me to a regimen that I have followed with satisfactory results for over nine years and on which I have maintained an average weight of 137 pounds during that period.

In the early eighties, I commenced the study of active-principle therapy, as taught by Burggraeve, and I was so much impressed with his own experience with the *bain du ventre* by the daily use of magnesium sulphate that I determined to apply that method to myself. I have consistently practiced it from that time until the present, and I can say, with Burggraeve, that, "my work has been for good, notwithstanding my critics." Now comes my daily practice: I take about 60 grains of magnesium sulphate in half a pint of water, as hot as is comfortable, immediately after my morning bath.

Breakfast.—An orange, a dish of oatmeal, about four ounces, well cooked and hot, with cream; one cup of strong black coffee, hot. I find this to be satisfactory and it does not pall.

Dinner.—I have one egg beaten up with a small teaspoonful of sugar and one pint of milk; four cakes, made for me and containing egg, flour, shortening and a very little sugar. As a dessert, one banana, if I can get them, or if not, some other fruit.

Supper.—Four cakes, as at dinner; one pint of milk; one banana or other fruit.

These two last meals are cold.

Occasionally, when possible, I have varied my dinner by substituting oysters, either raw or cooked in cream and, even less occasionally, when finances permit, I add one ounce of whisky to my egg and milk at dinner.

As I have stated, this diet has proved sufficient, in all about 48 ounces per diem, to maintain my weight from 135 to 140 pounds and without at any time becoming distasteful.

The calories are well distributed and the vitamines of the cold dinner and supper are amply sufficient to aid digestion and assimilation of the food.

This practice has kept me in good condition during nine and one-half years. I must mention, though, a recent attack of bronchorrhea during which I fell off in weight to 122 pounds. However, during my convalescence and since, my diet has restored my body weight to its original 135 pounds.

W. T. THACKERAY.

Fowlerton, Tex.

TEACHING THIRTY-THREE MILLION MOTHERS

A Better Care of Their Little Ones

Go where you will, pretty much America over, you will find mothers and other grown lay folk entrusted with the care of little folk, treasuring extra-carefully a stated collection of books pertaining to varied phases of the subject of health in the home.

Each book is of such a size that it may be slipped into a shopping-bag for car-perusal, the street-car, or the family auto while parked at the curb. It is five and a quarter inches across the page; seven and an eighth inch, from base to top. There is a neat, dignified, colorful cover; all books are uniform in their size; but no covers are in like designs.

In the fiscal year ending last August, 33,322,161 copies of these books were distributed freely to American householders everywhere. Each book reached at least three readers, it is safe to say. These aren't the sorts of books to be glanced at and then tossed away. So, one has a notion of the army of persons brought in touch with the good-health crusade they proclaim.

In this army, men, women, children—old, young, middle-aged, indoor-, store-and-office-workers, outdoor toilers of town and farm—they all have books in the array adapted to their especial needs.

None of these books cost recipient a penny. None contain a word of advertising, excepting a line in just one place, announcing them as the gift of a great New York life-insurance concern [Metropolitan Life Insurance Co.—ED.], which has had them written, printed, broadcasted; and will give to anybody else that may desire.

The books have been given out at 265 health exhibits held by the concern; at 107 health-campaigns, at 30 baby-weeks conducted by its aides.

Does this institution benefit, as greatly as a concern, spending so very much money to fur-

ther the public good, deserves to benefit?

We put the question to Mr. Ronald Moore, star policy-writer for the company, at Cincinnati:

"Just how does the company agent, ready to give these books to anybody that may request, use them also as a legitimate means towards helping to secure policies, toward earning his own and his employers' bread? How, that is, do the booklets do their bit in the fight for policies which competition has brought insurance folk everywhere?"

Mr. Moore stopped a moment, before answering, to make a hurried selection from among the books. "The Child's Alphabet of Health", "How to Be Happy and Well,—Clean Up!", "How to Live Long", "All About Milk", "The Child", "Flies or Babies", comprised one group. "The Magic Health-Book", "A Few Facts About Measles", "Mother Goose, a New Version", "The Health-Worker", "Information for Expectant Mothers", "Typhoid Fever", built a second selection here.

"You can form your own opinion as to the desirability of keeping, consulting, loaning, discussing, these books in just any home," he said.

"Ours", he then continued the thread of conversation squarely, "is a 'weekly insurance house'. We have agents going about, collecting agreed payments every week.

"Work for these starts with finding prospects; and then writing these down. We don't deny that we have competitors. We don't assume we have all the business we desire. Instead, we are constantly seeking new business, new debits. And, so, we assign a part of each day's work of each agent to the exploring, the testing, of brand new fields. An agent of the company, assigned a stated area of town or country, goes, each day, into a section where, with rare exceptions, he has no notion who may tenant the houses on the way. He starts where he left off, in such work, the day previously. He does not start at this 'new work', though, till 11:00 a. m.; he works until noon; then from 1:00 to 4:00. After that, it is found not worth-while to attempt other calls.

"An agent in this new-field-work averages a dozen calls in this time.

"In these calls, he makes his first point of attack. The booklets provide the key to solving the house-door solicitor's big problem, that of getting really past the door. They overcome the failure from: 'The lady isn't home!', when it's the 'lady' who states this herself.

"The agent gets by the door through the high character of the books. This has won for us permission to state that we cooperate with the public authority, in the matter of public health.

"Get this exactly, please: When a door is opened to us, we say, by permission, that we 'are cooperating with the local health authority in the matter of public welfare.' That brings folk to ask us in.

"The moment we are *in* that room, we ask our host (more often, hostess), if he or she be 'one of the women of the locality now taking advantage of our nursing-service.' Milady isn't; she'd like to know who has a nurse, just now, the neighborhood around; she hedges and asks what nursing-service is indicated. We reply by presenting our book, "Your Friend, the Nurse," free of charge!

"While she scans it, we counterquestion: What concern are she and hers insured in? Glancing on, subconsciously, she answers. Instantly we return with word of the free nursing-service that WE provide. We launch into minute details, we awaken her interest; we should win a policy there in the end!

"For the kiddie opening the door, there's a colored "Health A B C" book, and a chat till Mother arrives to see who is here; then there is a book for her beside.

"So, there are other books handy for just about anyone that may come to that door. We draw these from a portfolio hidden in the arm-pit, not to betray an agent. We learn to withdraw just the appropriate book. We awaken interest by the word FREE at the giving. We start conversation; detain the host or hostess; ought to 'sign them up' in the end!"

Nor does work with the books end there.

Policy won, collections are made each second week. Each time the man makes a collection, he leaves a different volume, marking on his list what is given, until there are thirty books in all.

Folk read those books thoroughly. They discuss those books; they bring them out to settle arguments by, in turn. They advise others to write or send for the books; and the nearest agent brings them, personally, in turn.

The big insurance-house responsible for this broadcasting good health propaganda from the sagest pens has tried many and varied advertising media in its history. None, however (those who should know tell us, without reserve or qualification whatsoever), have

paid them anywhere nearly so richly as has this one in the end!

FELIX J. KOCH.

Cincinnati.

DENTAL RESEARCH AT MELLON INSTITUTE

Director E. R. Weidlein, of Mellon Institute of Industrial Research of the University of Pittsburgh, has announced the establishment, by E. R. Squibb & Sons of New York, N. Y., of an Industrial Fellowship that has for its purpose the investigation of problems relating to the chemistry of preventive dentistry. Plans have been formulated for the study of the following problems: (1) Relation between composition of saliva and dental disease; (2) effect of different diets upon composition of saliva; (3) action of acids upon enamel, and (4) physical and chemical properties of the tooth. The results of these investigations will be published from time to time, as the progress of the work seems to warrant.

The incumbent of this Industrial Fellowship is Dr. C. C. Vogt, a member of Mellon Institute, who has been engaged in research on various dental problems, since 1914; and he will have the benefit of the advice and clinical cooperation of Dr. H. E. Friesell, Dean of the School of Dentistry of the University of Pittsburgh. The resources of dentistry and chemistry will thus be combined for the solution of important dental problems.

CLEANING HOUSE FOR A GOOD PURPOSE

It is not always possible to put over a double service in one operation, but every doctor has unused instruments too good to throw away and too infrequently used to be worth preservation.

May we suggest that you take stock and pack any nonessentials you may have and mail them to us for forwarding, or send direct to Dr. R. M. Wilson, Kwanju, Korea, Asia?

You will thus clean house and cooperate in a worthy, needy work and have the warm appreciation of a man doing a wonderful work under remarkable handicaps.

Dr. R. M. Wilson writes us about the 375 cases in the Fusan Leper Colony. He reports discharging 40 arrested cases. His medical work with chaulmoogra oil and ethyl esters has already been reported. Further and continued investigations are still under way.

He reports 575 cases under observation at Kwanju and has 10 cures which have remained free of any sign of leprosy for two years. All told, Dr. Wilson is treating 950 cases. His big need, however, is instruments, such as hemostats, scalpels and anything he can use for amputations—artery forceps, bistouries, dental forceps, probes, scissors, etc.

Now, clean house and put that rummage collection into good use. If you mail direct, mark the package "Gift to Lepers" and it goes duty free. But, do it now, while you think of it, and, if you prefer, CLINICAL MEDICINE will gladly receive, assemble and forward what you send.

ANNOUNCEMENT

To meet the increasing demand of the public for the proper care of the mouth and teeth, the Midtown Hospital of New York City has provided the necessary facilities for Clinics for the treatment of Pyorrhea, Extraction of Teeth and Oral Surgery.

Mouth Hygiene is generally recognized as an important factor in general health and there is a demand for such services by a much greater number of persons than heretofore.

The medical and dental professions are cordially invited to cooperate with us and call the attention of the public to the treatment the clinics provide.

Extracting and Oral Surgery Clinics. Wednesdays and Sundays, 1—3 p. m. Frank W. Kelly, D.D.S., Chief; Clinton S. Hafford, D.D.S.; Harold A. Meyer, D.D.S.

Pyorrhea Clinic. Mondays and Thursdays, 1—3 p. m. Alfred Asgis, D.D.S., Chief; John L. Kelly, D.M.D.; Robert H. Rose, A.B., M.D.; Stanley Slocum, D.D.S.; F. W. McDonald, D.D.S.

PREVENTION OF BLINDNESS

BROOKLYN, N. Y., May 12.—There is hardly an industry in the United States in which employes are not exposed to some form of eye hazard; more millions of dollars are paid to workmen each year as compensation for eye injuries than for any other form of injury except that resulting in death; many additional millions of dollars are lost by the industries each year through spoilage of material, lowered production and other forms of inefficiency resulting from eye strain caused by defective vision or improper lighting; while the seriousness of the eye-accident problem is steadily increasing in many industrial proper-

ties, others have developed means for controlling this problem which have greatly reduced eye injuries among their employes and which, if applied to all industrial plants, would reduce the number of persons blinded at work by at least half.

These are some of the high spots of the first public report of an investigation into the eye hazards of industrial occupations and the methods of eradicating them which has been conducted during the last two years by the National Committee for the Prevention of Blindness whose headquarters are at 130 East 22nd Street, New York City. This report was made here tonight by Lewis H. Carris, Managing Director of the National Committee, speaking before a special conference called for the purpose under the joint auspices of the American Society of Safety Engineers and the Brooklyn Safety Council. Mr. Carris said the full report of some 250 printed pages and more than fifty photographic illustrations of conditions in industry affecting the eyes of workmen and women would be issued by the Committee probably within a few weeks.

Harry Schultz, assistant manager of the Bureau of Safety, Sanitation and Welfare, of the United States Steel Corporation, also spoke, outlining the remarkable results achieved by the steel corporation in eliminating eye hazards, and the methods which were employed.

"Eye accidents surpass all other industrial hazards in seriousness, with the single exception of fatal accidents, whether measured from the humanitarian, the cost sheet, or the production standpoint," said Mr. Carris. "Approximately two hundred thousand eye accidents occur in industry annually, and it is estimated that several thousand eyes are permanently blinded as a result. There is hardly an industrial occupation in America which does not add annually to the steadily increasing total of the industrial blind and near-blind. Of a total of one hundred thousand totally blind persons in the United States, fifteen thousand, or nearly one-seventh, became so through industrial accidents. A still greater number suffer from loss of one eye, or impaired vision, caused by accidents while at work.

"The science of human rehabilitation has developed artificial hands, arms and legs that can do almost anything the human member can do, but no one has yet produced an artificial eye that can see. This fact alone makes the eye hazard the most serious of all non-fatal accident hazards.

"Even from the purely economic point of view, eye accidents cost more in compensation, in medical treatment, and in loss of productive efficiency than any other form of non-fatal accident. In Pennsylvania, for instance, 40 percent of all the compensation awarded for permanent injuries during the last eight years was awarded for eye injuries. The total amount awarded was more than $15,000,000 of which more than $6,000,000 was paid for loss of eyes. Only two out of all the industries listed in the compensation records of Pennsylvania did not pay compensation for eye injuries.

"Besides the direct cost of compensation and medical treatment for eye injuries, two other principal factors contribute to the monetary cost of industrial eye hazards. They are the indirect cost resulting from spoilage of raw materials and finished products, the latter often including extensive labor costs, and the natural slowing up of the individual's work and of the whole industrial machine resulting from defective vision, from poor lighting, and from accidents caused wholly or partially by poor vision. These costs aggregate many millions of dollars a year.

"The chief eye hazards in industry are, briefly, first, the accident hazards, such as flying chips of metal, minerals and wood; splashing liquids such as molten metals, acids and other injurious chemicals; and explosions of all varieties; second, there are the hazards of infections and eye diseases which arise from neglect of eye injuries, incompetent first aid treatment, contact with carriers of contagious disease, and exposure to excessive radiated heat; and finally, there is eye strain resulting from improper or inadequate lighting, improper vocational placement, and from ignorance of or disregard for the existence of defective vision.

"The solution of the eye hazard problem depends principally upon three forces: legislation, education and organized accident prevention activities in industry. There must first of all be laws requiring the reporting of accidents, specifying safeguards, and providing for the compensation of injured workers. Intelligent legislation, fair to both employer and employe, is a prerequisite for the prevention of eye accidents, as well as for other forms of industrial safety work.

"But education of workmen, foremen, superintendents, plant managers, and of owners themselves is just as important, because of the fact that many accidents result from causes that cannot be guarded against by any

mechanical means. All the legislation in the world cannot keep a workman from shoving his goggles up to his forehead when he is not being watched, if that workman has not been convinced that he should wear goggles every minute of the time during which he is engaged in work that presents a serious eye hazard. Only education can do that.

"Given ideal safety legislation and thoroughgoing safety education, there is still the need for definite and carefully organized accident prevention activities within the individual plant, mine, railroad or other public utility. Mechanical guards must be designed, purchased or manufactured, and installed and maintained in working order. There must be frequent inspection of plant conditions and operating methods. Intelligent supervision is necessary. Illustrated posters, warning signs and other forms of safety literature are needed.

"Where such a program as this has been carried out, completely and effectively, eye accidents have been cut to almost nothing, while great profits have been realized from the resulting increases in production which have occurred. But comparatively few industrial organizations have yet developed anything like the full eye accident prevention possibilities. Potentially every industrial concern, large and small, can eliminate eye injuries by following the methods successfully used by the few pioneers."

A NOVEL METHOD OF CURING A COLD

Some weeks ago, a prominent Massachusetts physician, a urologist, sent me word that he would like to see me, as he had a matter of great importance concerning which he wanted to talk with me alone. He offered to come to New York and see me next time I should be in that city. He wrote that he had a new use for a remedy supplied by The Abbott Laboratories, and the results he was obtaining with this remedy were very surprising. He did not tell me what the drug was nor for what disease he was using it.

The next time I was in New York, I wired the doctor I would be very glad to see him. He came to New York at once, and this is the story he told me:

Every winter, the doctor suffers from a severe cold in the head, which persists sometimes for months. During the last winter, it had been complicated with sinus trouble and he had been unable to get rid of it. One day, when he was in an experimental frame of mind, he decided to try Metaphen, the new synthetic organic mercury compound invented by Dr. George W. Raiziss, of the Dermatological Research Laboratories. He accordingly made up a 1:5000 solution and, through a pipette, introduced some of the medicament first into one nostril and then the other, letting it trickle down the back of his throat.

He was surprised to find it gave immediate relief from the congestive symptoms, i.e., the sense of fullness, difficulty of breathing and general discomfort which is so characteristic of rhinitis, acute or chronic. He was still more surprised the next day to find himself decidedly better. After about three days of such treatment, the symptoms had entirely disappeared.

A few days later, the doctor's wife began to complain of an oncoming coryza. He decided to try the same method of treatment. He did so, and the results were equally surprising. There was immediate relief, the discomfort in the nose and throat disappearing at once, and the symptoms cleared up within three or four days.

Since then, the doctor has been looking for cases. Mind you, he is not in general practice, and he therefore treated only friends and acquaintances and patients who came to be treated for other diseases. In all, he gave the Metaphen treatment to between forty and fifty different persons. He told me that, in every instance, the results were virtually identical: (1) the relief from congestion was similar to that obtained when cocaine or epinephrin is applied to the nose, and much more persistent; and (2) rapid relief of all symptoms, with complete clearing up of the cold, as a rule, on the third day.

The doctor said to me, "Now I hope you will try this thoroughly. At the meeting of the American Medical Association, why not suggest this method to every physician who comes along with a cold in the head? Try it on your employes. You must have a lot of cases of incapacity due to colds among your help. Try it—you will find it doing just exactly what I have told you."

When I got home, the first patient I tried it on was my wife. She is subject to attacks of acute coryza and they usually lay her up for a week or so. During the first and second days, there is a persistent flow from the nostrils; the eyes run so that she has to stay in bed with cold compresses, and her discomfort is acute. The first day of the attack, I forgot

about this remedy, but, on the next night, the doctor's advice came back to me. Accordingly, in the morning, I put her on the Metaphen treatment. Mrs. Burdick's report was virtually identical with that given me by the doctor. The local symptoms cleared up at once. One application in the morning made it possible for her to breathe through her nose without discomfort, and with little or no discharge through the balance of the day. Another application at night gave such relief that, on the following day, she hardly realized that she had a cold. On the third day the whole trouble was just about gone.

I pass this along to the readers of CLINICAL MEDICINE, with the suggestion that they try Metaphen and report results. I know this isn't the time of year for an epidemic of colds, so the clinical material may be rather scanty; but, if the present June weather persists, there will be cases enough of coryza even up to the middle of July.

Furthermore, it seems to me that, if Metaphen will do what the doctor says it will do, and what my wife says it will do, in cases of acute coryza, it should be almost equally effective in the treatment of hayfever. Keep it in mind and try it out. It certainly can do no harm, and I confess I have much faith that it will prove a very efficient remedy in this disease.

The doctor's method of treatment, to be exact, is this: He makes a 1:5000 solution of Metaphen; then, with an ordinary pipette, he runs a few drops first into one nostril and then in the other, letting it trickle back through the nose, until the whole nasopharyngeal mucous membrane is well covered. The patient is directed not to blow the nose, but to absorb any excess discharge with a handkerchief, the purpose being to keep the remedy in contact with the membrane as long as possible. These applications may be made several times a day.

For your information, I may say that, chemically, Metaphen is Di-acetoxymercuri-4-nitro-2-cresol. It is supplied only in 1:500 solution, in 4-ounce bottles. It is one of the most powerful mercury preparations ever placed upon the market, being many times as potent as bichloride of mercury—considerably more potent bactericidally than Mercurochrome. The new remedy is already quite largely used as a wound disinfectant, in ocular inflammations, for the treatment of gonorrhea, etc.

Chicago, Ill. ALFRED S. BURDICK.

A KINDLY LETTER FROM DOCTOR LAWRENCE

Your June, 1924, CLINICAL MEDICINE has just come to my office, together with its "Au Revoir", which is indeed a gem. For years past, the kindly and friendly spirit which "The Clinic" has so often expressed, not only to members of our profession in general, but especially of deceased and retiring members of your editorial staff, has been a matter of much pleasure and satisfaction to me.

I recall the well-deserved words of commendation said of our esteemed Dr. William F. Waugh, of Doctor Abbott, and of Doctor Rittenhouse, as well as of Mrs. Abbott. The kindly goodbyes and good wishes which the June "Clinic" carries to Dr. H. J. Achard are not only well deserved but doubtless are seconded by hundreds of the Clinic family. I shall not forget the pleasant hours which I lately spent with him and with other members of the editorial staff.

V. E. LAWRENCE.

Ottawa, Kan.

[We are always glad to hear from our dear friend Doctor Lawrence, who has for years helped carry the message of therapeutic exactness and efficiency to physicians in this country. It should not be forgotten that he was one of the first men to use Calcidin in the treatment of croup. The articles which he has written upon this topic, the first of which was published twenty-four years ago, are classics, indeed. In behalf of Doctor Achard as well as the other members of the editorial staff, we extend greetings and best wishes for his continued good health and activity in the great field of medicine.—ED.]

A LOCUM-TENENS FOR YOUR PRACTICE

Here is an opportunity for some doctor who would like to take a postgraduate course, or a vacation. Our good friend, Dr. R. J. Smith, of Westcliffe, Colo., has sold his practice and is now foot-loose. Doctor Smith says that he would like to go to California for the winter, and could relieve some good doctor of his practice for a period of two or more months. Doctor Smith will furnish references.

We suggest that any doctor who is interested should communicate with Doctor Smith.

Let Us Play

Conducted by All of Us

A Motor Trip

Through the Connecticut River Valley in New Hampshire

By CHARLES J. DRUECK, M. D., Chicago

TO the author, the origin of the names of the regions through which he travels has always been an interesting subject and no small amount of history and geography is to be learned from it. It is, however, a more complicated subject to trace than the origin of the nomenclature of European states which, for the most part, bear names derived simply from the ancient tribes by which they were formerly inhabited.

Twelve of our states bear names of English origin, most of which are familiar to us from our studies in American Colonial history. New Hampshire is one of these, the original territory of which was conveyed by a patent of the Plymouth Company to John Mason, in 1629, and named by him for the English County of Hampshire.

New England has become the favorite touring section of America; for, nowhere else, can there be found such a variety of scenery contained within a comparatively small area, so many miles of good roads, or so many places of historic interest. For generations, isolated New England resorts were famous. But, with the coming of the motor car, the entire region has become one vast resort, from the rocky cliffs of the Naugatuck Valley to the White Mountains' highest peak.

Aside from natural scenic and historic interest, a large proportion of the population of the newer states came from New-England stock and, as expressed by Whittier, this sentimental association adds interest for many people in a tour of New England.

"Land of the forest and rock
Of dark blue lake and mighty river,
Of mountains rear'd aloft to mock
The storm's career, the lightning's shock
My own green land forever.

Oh, never may a son of thine
Where'er his wandering steps incline
Forget the sky which bent above
His childhood, like a dream of love."

With the advent of the motor car to supplement New England's advantages, there arose a demand for the best route through this scenic wonderland, which should include the varied scenery of the mountains, with the attendant panorama of stream, lake, forest, rolling farm lands, and the rugged coast of eastern New England.

New Hampshire, long famed for its cloud-capped mountains, its crystal lakes, streams and waterfalls, its deep woodsy trails, and its scenic coast line, offers to the "hiker," the mountain climber, the camper, the fisherman, the hunter, the automobile tourist and to all lovers of the great out-doors unlimited possibilities for spending an ideal vacation. Then, "When Winter Comes" and deep snow blocks the mountain pass and drifts pile high in the winding valleys, the devotee of winter sports finds here a world of white and sparkling beauty where the thrill of skiing, tobogganing, and skating can be enjoyed with red-blooded enthusiasts at the winter-sports carnivals which are now regular events throughout the State.

New Hampshire has a state trunk line system of 1,420 miles and, to date, 1,060 miles of this system have been completed with various types of construction from common gravel to the highest type of reinforced concrete. In addition to the state trunk line system, 700 miles of improved highways have been constructed by towns under the State Aid Law. All completed highways are under patrol maintenance and, as the main arteries of travel are practically completed, the motorist will find, with few exceptions, dependable highways along all state and interstate routes.

The State of New Hampshire maintains one of the efficient fish and game departments of the East. It does as much to keep the fishing in the state up to standard (if not more) as any state of its size and population.

It maintains five hatcheries and a game farm. In the year 1921, twenty-one fish were distributed for every inhabitant of the state, man, woman and child. Very nearly this average is maintained year after year.

The hatcheries are located at Colebrook, Warren, New Hampton, Laconia and Conway. The Game Farm is at New Hampton. The public is invited to visit and inspect these at any time during business hours; you are not only invited but urged to accept the invitation, that you may know first-hand just what is being done along these lines. In this work, the state is spending approximately one hundred thousand dollars ($100,000) per year and feels that it is an investment well worth while.

Of game, grouse, rabbit, deer and fox are particularly abundant.

Licenses are required for all persons for hunting in the state. So are licenses required for all male persons for fishing, and it is this license money that supports the department.

What a Happy Place to Gossip With the Whispering Trees on a Golden Summer's Day!

In August, the fog settles densely each night in these mountains, and it was nearly ten o'clock in the morning before we left Williamstown, Mass., on our way north. After crossing the Connecticut River at Springfield, Vt., we entered New Hampshire. The Connecticut River Valley comprises the best farm land in New Hampshire.

Peru Mountain pass, much improved as to grade, is negotiated soon after leaving Manchester. Between the prosperous and pleasing villages, lies the (perhaps) most primitive section of the entire tour, and one feels the Old New England atmosphere of granite hills and stony farms which have sent many famous men into the world's affairs.

Claremont is one of the few New England towns where British Royalists predominated in numbers during the Revolution.

At Newport, is the famous Corbin Park game preserve, and a little farther on is Sunapee.

Here, after rounding the shoulder of Majestic Mt. Sunapee itself (2,700 feet above the sea level), we got our first comprehensive view of this lovely lake over which we were soon to sail in the little steamer that was waiting, steam up, and impatient to be off over the mirror-like surface of the water. There is no finer sheet of water than Lake Sunapee, for small craft; a large fleet of rowboats and canoes is available. Yachting is very popular and there are many interesting races during the season.

More than two and a half centuries ago—in 1630, to be exact—the footprints of a white man were first impressed upon the sunlit shores of that regal sheet of cool and crystal water, Lake Sunapee. Type of his times and of the hazards of New World civilization, he was a hardy scout sent in advance of an exploring expedition from Boston, and had tarried on the Warner River in fear of the lurking Indians.

Almost one hundred and fifty more years elapsed before a permanent settlement was made in the vicinity of this rare gift of Nature to what had then become the Granite State.

Today, Lake Sunapee stands without a peer among the many summer resting places that mark New England apart from all the rest of the continent. For, nowhere else in all this land, is its counterpart to be found; in no other state or region is to be visited another lake resort where the identical conditions of recreative opportunities, temperature, atmosphere, scenery and material conveniences prevail.

Nowhere else in this region are to be found such glorious scenery, such inspiring walks and drives, such safe and unrestricted boating and sailing, such cooling and health-giving ozone and, above all, such satisfying rewards for those who love the rod and reel. The flora and fauna, and even the mineral wealth of the Sunapee basin, include specimens and treasures not found in other portions of the

state. Lake Sunapee owes its name to a combination of Indian words meaning "wild goose water." It is rather remarkable, by the way, that the early aboriginal residents of the region, the Peacock tribe of Algonquins, should have left so few traces of their presence as are to be found today. If Sunapee lacks in anything, it is in legendary Indian lore

Geographically, Lake Sunapee nestles among the hills, 1,103 feet above sea level. The lake is about ten miles long, indented with enticing bays and coves, and ranges from one-half to three miles wide. Its shingle shores lie within the confines of three different towns—Sunapee, Newbury and New London—and the largest settlement upon its borders is the town of Sunapee, where centers the hotel and social life of the region. Of other settlements, there are a half score or more, each with its distinctive characteristics and brought in touch with each other by the busy little steamboats that ply from landing to landing.

Bidding good-bye to Lake Sunapee station and Breezy Point, hard by, the steamer heads toward the east shore, swiftly bringing into view the pleasing vista of the lake itself for about a third of its distance northward, the prospect being broken by Great Island and Little Island, two pretty, tree-covered dots upon the surface of the water just beyond the Narrows.

One of the Attractive Summer Colonies.

Pine Cliff is the first objective point. In this attractive settlement, where the whispering pines come almost to the very edge of the water, there is a large colony.

Continuing northward along the eastern shore from The Fells, and not far beyond there, at the Narrows, are Donigan's and Rowe's landings. Just north of Donigan's Landing is a delightful stretch of shore known as Point of Pines. The view from this point is unsurpassed. Across the lake to the southwest, Mt. Sunapee rises majestically from the water's edge, and also the most uninterrupted view of the entire length of the lake from north to south is here obtained. Along this shore, the bass fishing is good and, near here, is some of the best salmon-fishing in the lake.

Nowhere is to be found, in water that is available to the public, a greater variety of game fish than those which lurk in the crystal depths of Sunapee. There are trout running as high as six to ten pounds, the landlocked salmon or ouananiche, ranging from three to twenty pounds in May, June and early July; the beautiful rainbow trout, transplanted from California; the blue-back Rangeley Lakes trout; chinook salmon, weighing from three to eighteen pounds and transplanted from the Pacific coast, are very plentiful; the landlocked smelt, a toothsome table fish; and, last but by no means least, the Sunapee saibling, or white trout.

This aristocratic fish is a noted feature of Sunapee, its only contemporaries inhabiting a couple of small New England lakes north of this. It is very prolific and sometimes attains a weight of twelve pounds, though averaging four to five pounds.

All these finny denizens of the lake afford excellent fly-fishing and trolling from May 1 to about June 10. They are succeeded by the black bass, which rise to the fly after July 1, and are also to be angled for with minnows and insects. Pike, perch and pickerel also favor Sunapee with their presence. The quest for deep-water salmon and native begins about July 1 and lasts until the first week in September, when the black bass again begin to bite. The smelt usually begin to run about the last of April. The ice, as a rule, goes out late in April and, just as soon as navigation is possible, the steamer begins to run for the accommodation of the early fisherman.

One of the strangest and most remarkable features of the approach to Sunapee Harbor is the tall and ghostly lighthouse on Loon Island, locating a series of reef-like rocks that were a serious menace to navigation before the structure was erected.

There is a mica mine within two miles of the town, and also a granite quarry on Quarry Hill, near Burkehaven. This calls to mind the fact that every mile of the Sunapee section offers something of interest to the geologist and mineralogist.

Glacial phenomena are in evidence on every hand, and New London and Springfield both furnish choice crystals of amethyst; beryls, garnets and tourmaline prisms are found in Springfield; smoky and rose quartz, fibrolite, quartz diamonds, staurolites and amethystine

quartz reward those who visit Ragged Mountain (2,256 feet).

Returning to Sunapee station, we returned to our automobile and journeyed around the northern shore of the lake to George's Mills.

Life at George's Mills is certainly not exciting, and that, perhaps, is why its inhabitants live to such a ripe age. The features of special interest to the tourist within the limits of the hamlet itself are Otter Lake, which discharges into Sunapee through a riotous stream and turns the wheels of several picturesque mills, and Ledge Pond and Baptist Pond. Little Sunapee and Twin Lakes, are within two miles of George's Mills and have a charm and character all their own.

Royal Arch, a remarkable freak of nature, is located about two miles away in the direction of Springfield. It is an uphill drive to the somewhat remote location of this peculiar conformation, but the view from the crest of the adjacent hills will repay the effort. One can almost look down into the very streets of New London, and the outlook upon Lake Sunapee and its surroundings is simply sublime.

What has been said of the attractions of the region for the mineralogist can be set forth also in behalf of the lovers of flowers.

Looking West From Garnet Hill.

The flora of the lake includes not only all the specimens usually found in that part of New England, but many beautiful orchids hide shyly in the forest recesses; and, as a certain Sunapee bard has poetically put it in prose: "Strayed far from gardens long forgotten, hoyden jacqueminots, rich in attar, spread their gaudy magenta on sequestered hillsides, and pale swamp roses lay bare their golden hearts in the wet thickets."

Artists and photographers will find plenty of rich and rare material for their purpose and to their liking. Dismantled sawmills, gristmills, old dams, an occasional deserted farmhouse and such subjects are to be found.

Even the poet and the author will find inspiration for their work in their rambles roundabout in this enchanted country.

There are no fewer than 370 different species of bird life in the surrounding fields and forests, including the entire family of thrushes, with a single exception. This section seems to be a common meeting ground for Alleghany and Canadian bird species and, therefore, offers a peculiarly instructive field of research for the ornithologist.

And all who have enjoyed its charms, even for a fleeting moment, will feel that, in Lake Sunapee and its environs, there is to be found the ideal retreat for both, mental and physical recreation, a place where Health, Happiness and Refinement are the triple influences whose sway is undisputed.

"Lake of the wild fowl, Soo-Nipi the Blest,
Agleam in gold of summer day begun,
Rosed with crimson ray of stooping sun,
Jeweled by pallid planet in the west—
Oh, thou art beautiful, whate'er the test."

Leaving Lake Sunapee, we headed for the famous White Mountains. At Franklin, the birthplace of Daniel Webster, we made a sharp turn to left and followed the Pemigewasset River to the mountains. Plymouth, fifty-eight miles from Lake Sunapee, is called the southern gateway to the White Mountains via Franconia Notch. By this passage, the full effect of the magnificent panorama is obtained in the ever changing scenic effects. At North Woodstock, may be had splendid views of near and distant mountains.

TAKING THE NORTHERN TROUT

There is, perhaps, no field of outdoor activity that has a stronger appeal to members of the medical profession than angling. This is no less a credit to the high ideals and enlightenment of the profession than it is an honor and a tribute to the imposing traditions of the sport. Fly-fishing, especially, seems to hold charms that prove irresistible to a countless number of physicians and surgeons.

The reason for this is in nowise difficult to understand. In the first place, fly-fishing is an art, the practice of which affords an outlet, at once natural and delightful, for exercising an inherent skill in delicate manipulation, observant study and intellectual application. Then,

too, it affords a most enchanting and salubrious means of disburdening oneself from the strain and depression resulting from constant attendance in sickroom and hospital. Radiant sunshine, invigorating air, laughing waters, caroling birds, the redolent perfume of flowers and the ecstatic rise of a trout to a fly revivifies the body, cleanses the mind and fills the soul, if not the creel.

As is customary at this season of the year, there is an exodus of sportsmen from the larger cities to the great northwoods of Maine and Canada, where the whitethroat pipes his cryptic lilt and the loon wails deliriously across sequestered lakes. Here, in some localities, at least, the trout-fishing remains good and there are still a few places where fishing soon becomes boresome because of the extreme ease with which trout may be taken on a fly. There are some such localities in Maine and Ontario and a great many more in British Columbia.

While the trout in such regions will frequently take almost any lure, live or artificial, that is offered them, it goes without saying that fly-fishing, as a rule, affords the best sport. During the summer months, of course, fly-fishing in the larger lakes is virtually at a standstill, and the man who wants to get his fish has to fish deep. In the smaller ponds and streams, however, there is at least some fly-fishing to be had from the time the ice goes out until the middle of October. The best fishing is to be had early in the spring and again with the first cool nights in September. The fall-fishing, however, is hardly ever as good as the spring-fishing.

The tackle used for Maine and Canadian trout-fishing is very similar to that employed in ordinary stream-fishing, except that it is, in most instances, advisable to have it somewhat heavier. The rod, especially when it is to be used for lake-fishing, should be 9½ or even 10 feet long and fairly stiff and powerful. The reason for this is that, in fishing in the larger bodies of water, it is frequently necessary to handle a much longer line than is essential in fishing in the smaller streams, and the average angler will find it a rather difficult matter to handle a 50-foot cast on a 4- or 4½-ounce rod, not to mention the undue strain occasioned on a light rod in constantly manipulating a long line.

The reel should hold at least 40 yards of a line to conform with the weight and power of the rod and should be of sufficient weight to correctly balance the rod. The line should, of course, be of enameled silk. It is advisable to use leaders somewhat heavier than would ordinarily be employed in stream-fishing. They should be 6 feet in length and have three loops on which to attach flies.

For reasons which are not entirely understood, northern trout have a penchant for brightly-colored flies. It has been argued that the reason is that the trout of these regions are "uneducated" and will take almost any bunch of feathers remotely resembling a fly that is offered them. If this were really true, they would rise as readily to such flies as the Cahill, Cowdung, Haré's Ear, etc. As a rule, however, these flies do not by any means prove as successful as the brightly-colored ones.

Of all flies for northern trout, the Parmachene Belle seems to be the most effective under most conditions. An angler equipped with this pattern only is almost certain to get some trout, at least. This fly was designed to imitate the fins of a fish.

There are many other excellent Maine and Canadian flies. Among the most popular may be mentioned the following: Montreal, Royal Coachman, Brown Hackle, Silver Doctor, Professor, Rube Wood and Grizzly King. These flies should be tied on number 8 and 10 hooks for small trout and on number 6 for larger trout, weighing two pounds or more. For salmon, number 2 and 4 hooks are recommended. Not one of these patterns even remotely resembles a natural insect; yet, an assortment of these flies in the angler's book is certain to fill the pan.

As previously stated, by far the best fly-fishing is to be had in spring and again in the fall. In some sections, however, fairly good fly-fishing may be had during the mid-summer months. This is especially the case in those lakes into which a number of springs and streams empty. During the early morning and late evening hours, good fly-fishing may often be had at the mouths of these streams during the months of July and August. There are also some sections where streams abound and where trout will rise to the fly throughout the season. Lake Moxie in Maine and the country immediately surrounding it offers such facilities. This is rather exceptional, as most sections in Maine afford little, if any, fly-fishing during the mid-summer months.

Successful lake-fishing during the months of July and August can only be accomplished by means of deep trolling or still-fishing. For this purpose, a 7½- or 8½-foot bait rod is to be recommended. Bamboo rods are generally preferred because of their superior action,

though steel rods have their good points. The latter type of rod is especially to be preferred for exceptionally heavy trolling or on canoe or pack trips when rough handling and usage can not be eliminated. The reel should be of the quadruple, multiplying type and should hold from 70 to 80 yards of a 20- or 25-pound test line of braided waterproof silk.

There are a countless number of trolling lures upon the market. The majority of these will catch fish if used properly; but, there are unquestionably certain types that are best adapted to certain waters. The depth at which it is necessary to troll will depend upon the character of the water and the season of the year. During very hot weather, it becomes necessary to troll very deep. In some sections, such as Lake Temagami in Canada, copper lines are used in order to carry the line down to a sufficient depth. Where ordinary braided silk lines are used, it is often necessary to attach sinkers weighing from 1 to 4 ounces. A short, bronze or copper wire leader, fitted with swivels and connecting links, is to be recommended for most types of trolling.

It would, of course, be impossible to mention all the various spoons and spinners on the market. Among the most popular for square-tail trout and salmon may be mentioned the Archer Spinner, Rangely Spinner, the Lowe Star Spoons, and the various fluted trolling spoons. For lake trout, the Temagami Spoon, Lobb Spoon and Herendeen Spoon are prime favorites. More emphasis should be placed upon the manner in which these lures are used, rather than on the selection of any particular type.

From reports which have thus far been received from the various popular resorts of Maine and Canada, it may be stated, with a fair degree of assurance, that the coming season bids fair to be a record season of good catches. Sebago, Rangely, Belgrade and Moosehead Lakes, in Maine, have reported some exceptionally fine catches. If the good work continues, anglers may feel confident of some good strings of fish, besides the usual store of health, recreation and a wholesome and harmless excuse for doing nothing.

R. SCHRENKEISEN.

New York City.

TERBACKER SMOKE

There's suthin' 'bout terbacker smoke
'At nothin' else c'n beat,
Fer dissipatin' wrinkles,
An' smoothin' out complete
Our troubles, real or fancied
We meet along the way;
It seems to sort o' even up
Our life from day to day.

Some like it in the mornin' best,
When feelin' fresh an' new,
They say it starts things goin',
An' helps 'em all day thru;
Some likes it most at evenin',
Say, 'long 'bout half-past nine,
They certify emphatic
'At then the smokin' 's fine.

Now as fer me, I'm tellin' you,
'At while they may be right,
I'm not disputin' any one
Preferrin' morn er night;
Of all the time in twenty-four,
The hour I want to see,
The one right after dinner
Is smokin' time fer me.

When we have finished up our work,
An' e't a hearty meal,
With a pipe full o' terbacker,
Oh, then how good we feel,
With Morris chair an' paper,
Our joy's about replete;
Fer suthin' 's in terbacker smoke
'At nothin' else c'n beat.

It aint so all important
What sort o' pipe we use,
The thing 'at's most essential,
Is the kind o' weed we choose;
Italian brier, er meerschaum,
A clay, er just plain cob,
'Ll give us real enjoyment
With *our choice* on the job.

So when it's all been said an' done,
The time my smokin' 's best,
Is after dinner's over,
An' I set down to rest;
Then a pipe o' good terbacker
'At smokes up nice an' sweet,
'Ll bring about contentment,
'At nothin' else c'n beat.

—HOMER CLARK BENNETT,

Lima, Ohio.

What Others are Doing

IDIOPATHIC EPILEPSY AND ENDOCRINE IMBALANCE

Dr. Maximilian Kern, Chicago, (*Hospital Social Service,* May, 1924) points out that the history of epilepsy is as old as that of medicine itself. The riddle of this disease, ably described by Hippocrates, embracing a very long period from that of superstition to modern biology, is narrowing down to endocrine conception, though still more light is needed to establish this disease on a definitely scientific basis, as far as its etiology is concerned.

Epilepsy has been associated with thyroid and other glandular abnormalities, such as hypophysics, thymus involvement. Lisser and Nixon have benefited six patients suffering from idiopathic epilepsy and showing evidence of dyspituitarism with organotherapy. Lowenstein benefited sixteen cases by pituitary medication. Kern himself recently reported five cases, in four of which he had gratifying results with pluriglandular therapy. His fifth case was probably due to trauma and, therefore, not of the idiopathic type. Whether or not his and other workers' results are to be looked upon as permanent cures, time only can tell, though, for the time being, the benefits have been pronounced.

Kern concludes with a plea to social service workers with their time-honored prejudices concerning the therapeutic impotency in relation to idiopathic epilepsy, and to bring to this class of sufferers a message of hope, namely, that epilepsy is a disease which is likely to be completely cured by proper endocrinological treatment.

SEES MERIT IN MILK-PROTEIN INJECTIONS

At the American Congress on Laternal Medicine, convened Feb. 18th last in St. Louis, Dr. Geo. Gelhorn read a paper on "Non-Specific Therapy."

While milk-protein injections cannot be expected to "raise the dead", they do much to build up the natural immunity of the patient in certain crises, he stated. He and many other eye-men are using them in corneal ulcer with 100-percent results. He advocated the injection of milk, 5 Cc. the first day, 8 Cc. the third day and 100 Cc. for following injections, with an interval of one or two days between injections; this interval to be lengthened if severe reactions occur. Reactions, as a rule, occur after the first two or three injections only, and the severity of the reaction has nothing to do with the results accomplished.

The course of treatment consists usually of ten injections, although remarkable results have followed three or four doses. The white cell count was distinctly raised, although quite gradually, after injections to full normal.

He stated that he was using milk protein before operations.

SYPHILIS IN CHILDREN

Drs. Boone and Weech (*Amer. Jour. of Diseases of Children,* Jan., 1924) used sulpharsphenamine in 21 cases of congenital syphilis in children under one year of age.

Six injections were given, a week apart. With rest periods of sixty days, four courses of injection were sometimes given. The contents of one ampule, 0.6 gm., is dissolved in 2.7 Cc. of sterile, freshly-distilled water. The total volume will then be 3.0 Cc., a 20-percent solution. The maximum dose is reached when the baby is given 0.1 Cc. of this solution per kilogram of weight. General reactions following intramuscular injections of sulpharsphenamine are not common and, when present, are mild. Induration at the site of injection is infrequent and, in the author's experience of 349 injections, no abscesses have occurred.

(The arsenic content of sulpharsphenamine is 21 percent and it is stated that the arsenical may be given in doses of 20 mgs. per kilogram of body weight.)

In 55 percent of the patients, the Wassermann reaction became negative after one course of six treatments. The symptoms of hereditary syphillis rapidly disappear and the patient's general condition quickly improves after treatment. The writers conclude that because of the ease with which sulpharsphen-

amine can be administered, it should be very useful to the practitioner who is not adept at intravenous therapy.

CALCIUM CHLORIDE IN PLEURISY WITH EFFUSION

The remarkable action of calcium chloride in inflammatory affections of the serous membranes, Krummenacher says, hastens resorption of the effusion and reduces the temperature promptly while promoting diuresis. In acute cases of pleurisy, it has sometimes restored conditions to clinically normal in twenty-four hours.

Instances described in detail, writes Baker in the *Journal of the American Institute of Homeopathy*, June, 1924, show that the drug has to be given in large doses: 15 Grams of the dry calcium chloride in twenty-four hours, repeated the second day, if the fever persists, and reduced one-half, if the fever subsides. This treatment should not be kept up for more than five or six days; if kept up too long, the general condition suffers, the mineral balance becoming too far upset.

The taste is disguised by giving two spoonfuls of the concentrated solution (30 Grams of the dry salt in 100 Grams of water) in coffee, and drinking a little coffee afterward. For intravenous infusion, the dose has to be more than 2 or 2.5 Grams in a 5-percent solution. In one case, an intravenous infusion of 3 Grams had a remarkably prompt and permanent curative action but, in a case of septic bronchopneumonia, thrombosis in the brachial vein developed two days after injection into the vein. Otherwise none of the patients presented any by-effects and the general condition improved. There was no flaring up of any tuberculous process in the lung.

It is important to have table salt dropped entirely or partially from the diet during the calcium treatment, and for two or three days thereafter.

BILE SALTS IN MARASMUS

An English physician (writing in *The Lancet*) reports very satisfactory results from the bile salts, in marasmus affecting infants. The average dose was 1/3 grain of the mixed salts. The diet consisted of pasteurized cow's milk properly diluted for each patient.

Two of the cases were strikingly benefited, whereas no success was had with other treatment; despite every effort, they went a downward course, until the bile salts were tried. From then on, there was a gradual increase in weight and a general improvement which impressed all observers. The infants, apathetic and feeble, responded from the very first, until they were vigorous and thriving like normal babies.

The doctor does not venture to account for the favorable effects of the bile salts in these cases, only saying that they may facilitate fat assimilation.

NEW USES FOR EPINEPHRIN

In the *Journal of Laboratory and Clinical Medicine*, Feb., 1924, epinephrin solution is recommended for preventing the absorption of toxic substances formed locally in burns, ulcerations and suppurating wounds generally.

The Medical Times, Jan., 1924, reprints, from a foreign journal, the assertion that 0.5 to 0.75 Cc. of a 1:1000 epinephrin solution, injected five to ten minutes prior to a neoarsphenamine injection, prevents or appreciably lessens, a possible bad reaction. It appears to make the arsenical better tolerated, in consequence allowing one to give a larger (single) dose than usual.

Some physicians are using it prior to neoarsphenamine injections in all cases.

TWO RECOMMENDATIONS FOR OPHTHALMOLOGISTS

Cocaine, on account of its well-known drawbacks, is best supplanted by some of the newer products of synthetic chemistry, according to Small (Practical Medicine Series, Vol. 3, 1923). "For the past year, butyn has been largely used by the ophthalmic profession in preference to cocaine. Its manufacturers submitted the claims made for it to the Council on Pharmacy and Chemistry of the American Medical Association, who found it to be a synthetic product having the constitution and properties claimed. Its value has been proved by careful investigation. It is the most important rival to cocaine that has yet appeared."

The use of milk-protein injections is also recommended, for iritis, keratitis, gonorrheal ophthalmia, etc.

Milk injections in eye diseases are not a panacea for all cases. There are even failures, though they are rare.

Injections do not displace the usual classical treatment but are to be given conjointly.

Milk injections have a prophylactic effect of the first importance. Such prophylactic effect has been utilized as a preliminary to

surgical interventions with the object of reducing the chances of secondary infection. The author has found it of immense benefit in obtaining an aseptic condition prior to operations for cataract and other surgical work on the eye.

IODINE: A POOR ANTISEPTIC

McDonald, in *the American Journal of Obstetrics and Gynecology,* Oct., 1923, brings additional evidence forward to show that iodine as a germicide and disinfectant is much too highly rated and enjoys a popularity not at all deserved.

Used upon superficial wounds, this antiseptic delays healing many days, depending on the strength and frequency of application. This occurs because there is more or less tissue destruction, which must be overcome and eliminated before healing can even begin. The irritant action of strong solutions, as well as weaker solutions that have stood for some time till decomposed, is well known. Iodine was used as a counter-irritant long before its use as a skin disinfectant.

It is also neutralized by organic matter, its coefficient of 38 tumbling to 7 under practical conditions. A 1:100,000 solution will kill the staphylococcus promptly without organic matter but, in the presence of serum, a 1:800 solution will not do the work short of half an hour.

VACCINE IN THE TREATMENT OF TYPHOID FEVER

Having a good water-supply and close supervision of its milk trade, Copenhagen is remarkably free from enteric fevers, and, in 1922, only 19 cases of typhoid and paratyphoid fever were notified. This state of affairs is an eloquent tribute to preventive hygiene, and it is expected that prevention alone will, some day, stamp out these diseases in this and other civilized countries.

In the meantime, we have to consider the best measures for treating these ailments, as well as preventing them; and, in this connection, a most encouraging paper has recently been published by Prof. Valdemar Bie, of the Blegdams Hospital, in Denmark. He has given a typhoid vaccine in 13 cases of typhoid fever and six of paratyphoid fever. The vaccine was made from an agar culture of typhoid bacilli, and was, in most cases, given by intramuscular injection, the doses on five successive days being 100, 200, 400, 700, and 1,000 million typhoid bacilli. The diagnosis in the cases thus treated was confirmed by a positive Widal reaction or by the culture of typhoid or paratyphoid bacilli from the blood or feces.

The numerous charts showing the action of the vaccine on the temperature bring out one interesting point: whether the fifth and last injection was given as early as the thirteenth or as late as the fortieth day of the disease, it was almost invariably followed, in a day or two, by a fairly rapid fall of the temperature by lysis to normal. Only in one case did the temperature fall by crisis on the day following the last injection, and such a fall was not considered desirable on account of the risk of serious collapse, such as was often seen during the war in Germany and Austria as a sequel to intravenous injections of typhoid vaccine in cases of typhoid fever. The conversion, in most of Prof. Bie's cases, of a high continuous temperature to one that fell by rapid lysis was associated with other signs of improvement, such as a return of the appetite and the cessation of diarrhea. There was only one death in this series of cases, and, in this case, the patient was very weak and already suffering from pneumonia when the first injection was given, on the twenty-second day of the disease. In another case, the patient's recovery did not seem to depend on the vaccine to which no response could be observed.

The action of the vaccine being effective in both the typhoid and paratyphoid groups, it could not be regarded as specific, and Prof. Bie suspects that these cases were illustrations of the efficiency of non-specific protein therapy. Recently, he has been treating cases of typhoid and paratyphoid fever with intramuscular injections of a staphylococcus vaccine, and the results were as good as with his typhoid vaccine. The success of a prophylactic vaccination against typhoid and paratyphoid fever depending essentially on the specific properties of the vaccine, it is curious to find the specificity of a vaccine playing such an unimportant part when it comes to treating an already established infectious disease.

BISMUTH IN SYPHILIS

The Lancet (London) recently translated a paper by Emery and Morin in reference to the merits of bismuth salts in the treatment of syphilis.

In suitable doses, say they, bismuth is very

active as an antisyphilitic. On the average, a chancre heals in 13 days with 4 injections. Secondary lesions are overcome in 11 days with 3 or 4 injections, on the average.

Many physicians, in this country as well as abroad, now believe bismuth compounds to be equal, if not superior, to mercury in general syphilotherapy, and especially to be preferred when mercurials are not well tolerated. (Alternate doses of bismuth and arsenic have recently proved effective.) Also, they are considered highly useful for arsenic-resistent patients and in relapsing cases. In such instances, bismuth has frequently been observed to "change a presistent positive Wassermann to a negative."

Of the several salts proposed, the potassium bismuth tartrate is very effective and of low toxicity. It is supplied in ampules for intramuscular injection along with a local anesthetic, which serves to minimize or entirely eliminate the pain incident to injection.

DISEASES OF THE SKIN IN THEIR RELATION TO INTERNAL MEDICINE

Fred Wise and Joseph J. Eller *(Med. Rev. of Rev.,* Mar.) arrive at the following conclusions in an instructive paper on the subject given in the title.

From the standpoint of their relation to internal medicine, skin diseases fall into the following groups:

1. Skin diseases which are consistently associated with certain metabolic changes, the cutaneous lesions being directly due to these changes; examples: xanthoma diabeticorum and xanthoma tuberosum. We exclude from this category such maladies as leukemia and syphilis, in which the cutaneous manifestations merely reflect identical pathological processes inside the body.

2. Skin diseases usually (but not constantly) associated with certain metabolic disturbances or related to lesions of the viscera; examples: acanthosis nigricans; hydroa vacciniforme.

3. Skin diseases the causes of which are directly related to anaphylaxis, protein sensitization, allergic phenomena, and so forth; examples: urticaria, angioneurotic edema, pruritus, neurodermitis.

4. Skin diseases whose etiological basis probably lies in endocrine affections; examples: scleroderma, atrophoderma, dermatitis, dysmenorrhea, acne vulgaris, Recklinghausen's disease.

5.—Skin diseases frequently associated with evidences of focal infection; examples: lupus erythematosus, alopecia areata, furunculosis, purpura.

6.—Skin diseases due to functional and organic affections of the nervous system; examples: "neurotic" excoriations, "hysterical" gangrene, syringomyelia.

ACRIFLAVINE IN THE MOUTH

According to European journals, acriflavine is being used against the variety of "sore throat" known as Vincent's Angina.

An excellent paper on the subject appeared in the *British Medical Journal* for July 21, 1923. The throat is painted with a solution each day, for 3 or 4 days; the patient is also ordered to use a solution as a gargle.

For gargling, a 0.5-percent solution has been prescribed.

In 13 cases, the membranes were discharged and recovery occurred three to seven days after the institution of the treatment. The fourteenth patient suffered from four different attacks of angina; the first two reacted promptly to the treatment with acriflavine, but, on the third and fourth occasions, the disease proved refractory to this treatment and painting with arsphenamine was resorted to. The author concludes that acriflavine is an excellent remedy for Vincent's Angina.

EPINEPHRIN FACTS

A number of important facts about epinephrin solution are contained in a short article appearing in the *National Druggist,* for June (1923).

Such a solution may be given by mouth, because absorbable by the alimentary mucous membrane. Absorption is more rapid when not diluted too much; not more than 10 Cc. should be used as diluent or vehicle, which should be Ringer's fluid or normal saline. It should be given while fasting. The dose should be large; that is, from five to ten times the hypodermic dose which roughly amounts to 60 to 100 drops of the 1:1000 solution.

Such doses are usually effective. Vomiting of pregnancy may frequently be controlled by the drug. Intolerance is indicated by pallor. Upon its appearance, the drug should be instantly withheld.

Among the Books

THOREK: "THE HUMAN TESTIS"

The Human Testis. By Max Thorek, M. D. Surgeon-in-chief American Hospital, Chicago, etc. Illustrated. Philadelphia: J. B. Lippincott Co. 1924. Price $7.00.

The interest of surgeons and general practitioners, especially those who do genitourinary work, has been greatly aroused of late through all sorts of publications, professional and secular, in which claim is made that the miraculous endocrinic powers of the human testis would furnish decrepit old men with the joyous fountain of youth through simple operations, with or without transplantation of human or certain animal testes.

Traveling quacks and, to a limited extent, pretended ethical members of the profession, have managed to publish the most astounding claims in daily newspapers, and fabulous sums have been expended by men rich in money and poor in vital energy for the purpose of obtaining a new and prolonged foothold on life with its many demands. The "work" these men claim they do is hidden from public view, and, even in technical contributions, details have been withheld, for reasons which we think require no comment.

Accordingly, the physician, who now and then is approached by an old man or woman desiring "rejuvenation", finds himself in a quandary. He has seen the claims of the "rejuvenators", the "testimonials" of the "rejuvenated" and he has also heard discussions in medical societies, denouncing all attempts at transplantation of the human or alien testis as worthless. In the scattered literature, the labors of Lydston of Chicago, of Steinach of Vienna, and of Voronoff of Paris are, in many respects, contradictory in character, even if one has the time and energy to collect them for critical sifting.

Thorek, who maintains in connection with the American Hospital of Chicago a rather costly menagerie of anthropoids and a well-appointed surgical experimental station, in which he has labored for a number of years (the results of which have appeared from time to time in this and in other medical journals) has, with one stroke, lifted the veil of mystery and in one stately and dignified book of 34 chapters presents every conceivable problem connected with the endocrinology of the human testis in a clear and lucid manner, and, in a dignified, scientific method, expounds all that is worth knowing from the literature of the world, which, in itself, is no mean task.

The chapters on the anatomy, histology, physiology and pathology of the testis are not only exhaustive but well illustrated; the best and most scientific sources having been freely drawn upon for the sake of completeness. Students interested in the physiology of the testicle will find here a richness of literature which leaves nothing to be desired.

The surgical diseases of the testis and their treatment are treated in a number of chapters and are far more detailed than can be found in standard treatises on genitourinary surgery. Thorek has enhanced the value of his book by adding chapters on varicocele, hydrocele, certain diseases of the vas deferens and similar affections allied to those of the testis. The text is rendered more lucid by a number of fine illustrations, showing the steps of the different operations involved.

But, the great interest and importance of the book does not lie so much in these chapters, which have been treated in textbooks and monographs before, as in those chapters which deal with the endocrinology and transplantation of the testis.

A wealth of material has been gathered in this one volume and sifted critically in an authoritative manner. The chapter on Dementia Precox and the Gonads, while not representing the last word on this malady, which has baffled modern psychiatry, opens up a vista of scientific possibilities, the future value of which can only be surmised.

Thorek has devoted special chapters to Steinach's operation, to Homo-and Heterotransplants in man, to his own experiments with heterotransplants from anthropoids to man and from man to anthropoids.

An especially masterly chapter deals with the blood affinity in animals.

The materials used and the technic of all forms of transplantation are minutely described, so that any one with average surgical

skill can employ them, if materially equipped for this class of work.

Space forbids to discuss the other chapters; suffice it to say that, though the Reviewer has carefully studied the book, he has been unable to detect the slightest omission of any subject or problem pertaining to the subject matter.

This, then, is indeed a really valuable addition to contemporaneous medical literature which has been badly needed for some time.

The mechanical equipment of the book is superb, reflecting great credit on the publishers.

G. M. B.

SUTTON: "DISEASES OF THE SKIN"

Diseases of the Skin. By Richard L. Sutton, M. D., LL. D. Illustrated. Fifth Edition, Revised and Enlarged. St. Louis: C. V. Mosby Company. 1923. Price $10.00.

The man who has practiced medicine for more than a decade, when confronted with a puzzling dermatosis, has found himself turning naturally to Stelwagon or Crocker and sometimes he has wished that they were a little more up-to-date. He realizes, if he is *au curant* with events in this field, that various changes in classifications and even in our conception of the pathology of certain diseases have occurred and, therefore, wonders if it is safe to base his procedure on the recommendations of the older writers.

Sutton's "Diseases of the Skin" can be regarded not only as a complete treatise but as a wonderfully well-written work. It is also remarkably well illustrated. The bibliography is complete without being burdensome and proper consideration has been accorded such rather unfamiliar diseases as wit-kop, ochronosis, carotinoid pigmentation, etc. The chapter on blastomycosis is particularly illuminative. Generally, this is one of the books which should be on the practician's five-foot shelf for immediate and constant reference.

G. H. C.

KERR, FERGUSON, YOUNG & HENDRY: "OBSTETRICS AND GYNECOLOGY"

A Combined Text-Book of Obstetrics and Gynecology. By J. M. Munro Kerr, M. D., F. R. F. P. and S., James Haig Ferguson, M. D., F. R. C. S., James Young, D. S. O., M. D., F. R. C. S., and James Hendry, M. A., B. Sc., M. B. Illustrated. New York: Wm. Wood & Company; Edinburgh: E. & S. Livingstone. 1923. Price $10.00.

While there is no dearth of excellent textbooks on diseases of women and obstetrics, the Reviewer does not know of any other volume which so satisfactorily covers these two subjects. The more modern methods and operative procedures are very fully described and the illustrations really depict something. The chapters on the Physiology and Toxemias of Pregnancy are particularly interesting and present, in assimilable form, the latest ideas on this important subject.

If this Reviewer were going to purchase an "intimate" book on obstetrics and gynecology, one which he could fly to in time of need or read in spare half-hours with the view to improving his general technic, it would be this volume.

G. H. C.

SHERMAN: "VACCINE THERAPY"

A Physician's Manual of Vaccine Therapy. By G. H. Sherman, M. D. Press of the Bacteriological Laboratories of G. H. Sherman, M. D. Detroit. 1924.

While, in one sense, this little manual may be classed as advertising copy, it being designed to popularize and promote the products of the Sherman Bacteriological Laboratories, it is very acceptable inasmuch as it presents very good technical discussions on vaccines, immunization and kindred subjects. Speaking of vaccines in general, especially mixed vaccines, administered for the purpose of combating acute and chronic bacterial diseases, the author declares that the criticism against them has been due to various factors such as faulty concepts as to selection of vaccine, improper dosage and the use of products prepared unscientifically and lacking in antigenic properties.

The latter factors, it appears, are of particular importance, since the antigenic properties of bacterial vaccines are influenced greatly by the culture medium on which a particular microorganism has been grown and also upon the method of sterilization—sterilization by heat having been shown definitely to curtail the antigenic power of a bacterial vaccine.

Long experience has convinced the Reviewer of the great possibilities for good inherent in *mixed* vaccines of proper derivation, appropriate preparation and suitable preservation. We can not possibly follow those critics who claim that mixed vaccines are unscientific, as such. Inasmuch as they are in close imitation of natural processes, they do not merit the opprobrium, "unscientific" unless nature herself be designated in that manner.

The text of the manual, insofar as it sug-

gests bacterial treatment in a great variety of bacterial diseases, is acceptable.

One need not "follow directions" blindly. Indeed, the discerning physician will utilize a manual like the present one, as in fact all manuals and textbooks, as a guide for the definite procedure in a given case.

It would be ungracious not to add a word of appreciation of the very attractive mechanical make-up of this little volume. It is prettily bound in imitation art-leather, with pressed cover design, and makes a handsome appearance.

HOLLÓS: "TUBERKULOSE"

Erkennung der Tuberkulose und Ihre Heilung Durch Carl Spengler's Immunblut (IK). von dr. Josef Hollós. Leipzig. Hellas-Verlag. 1922.

In this little book, the author gives an account of his results in the treatment of tuberculous diseases by means of the so-called IK of Carl Spengler. It will be remembered that, according to Spengler, the immune substances in tuberculosis are mainly accumulated in the red blood cells and it is on the basis of this postulate, or, as Spengler claims, this discovery, that his method of treatment was elaborated.

Hollós has treated many thousands of tuberculous patients with manifest tuberculous disease, but also found that so-called tuberculous intoxication, such as children with disturbances in development, nervous people, those with affections of digestion and metabolism, of menstruation, with tuberculous rheumatism, thyreosis, epilepsy psoriasis, etc., benefitted.

Doctor Hollós' account forms an important contribution to the literature on the specific treatment of tuberculous diseases.

WICKHAM: "MATERNITY NURSING"

Maternity Nursing in a Nutshell. By Elizabeth H. Wickham, R.N. Illustrated. Philadelphia: F. A. Davis Company. 1924. Price $1.50.

"The information this little book contains has been gained by the actual experience of the writer, whose untiring efforts in maternity nursing have been productive of much definite success. There are various books written on this subject and all have their distinct value; but, the author felt that nurses who had not made a specialty of maternity nursing would appreciate a ready reference manual, *small* enough to fit a corner of their bag or suitcase; to serve its purpose at some critical moment. She trusts it will save unnecessary steps and be of general assistance to those who consult its pages." (Copied from the preface.)

We feel sure that this little book will be a great help to any nurse. Aside from the illustrations, it contains marginal notes, or headings, enabling the reader to see, at a glance, the subject of the paragraph. There is an appendix of Helpful Hints, such as: How to Keep Drinks, etc., Cold Without Ice. Removal of Blood Stains. Hypodermic Injections. Hot-water Bags. Removal of Adhesive Plaster from the Skin. Iodine Stains. A List of Symbols. Apothecaries' Weights and Measures. Table of Equivalents. A Glossary. The Index.

We list some of the chapters.

Anatomy and Physiology of the Female Pelvis, Ovulation, etc. Duration and Signs of Pregnancy. Prenatal Nursing Care. Complications of Pregnancy. Dressings and Outfits. Preparation for Delivery in the Home. Positions and Presentations—Normal Delivery, etc.

GRIFFITH: "CARE OF THE BABY"

The Care of the Baby. A manual for mothers and nurses, containing practical directions for the management of infancy and childhood in health and disease. By J. P. Crozer Griffith, M.D. Seventh Edition, Thoroughly Revised. Philadelphia: W. B. Saunders Company. 1924. Price $2.50.

This is a splendid little book for the young mother. In it, she will find much useful information. Some of the chapter headings are: Before the Baby Comes. The Baby. The Baby's Growth. The Baby's Toilet. The Baby's Clothes. Feeding the Baby. Sleep. Exercise and Training; Physical, Mental, and Moral. The Baby's Nurses. The Baby's Rooms. The Sick Baby.

The chapter upon the baby's diseases has been written particularly for those mothers who, through various circumstances, are unable to have a physician constantly within a moment's call. It contains a description of the symptoms by which we may know that disease is present; a consideration of the nursing of sick children; a concise résumé of the commonest diseases of infancy and childhood; and directions for the management of various accidents, including, among others, drowning and the swallowing of poisons.

The Appendix contains various recipes for food or medicine, remarks on the employment of baths of various sorts in sickness, of poultices, disinfectants, massage, and the like.

Here also are tables showing the proper proportionate doses at different ages, the doses of many of the remedies most commonly given to children, the contents of the emergency medicine closet, etc.

The book contains an extensive index which increases its value considerably.

HESS: "DISEASED INFANTS"

Premature and Congenitally Diseased Infants. By Julius H. Hess, M.D. Illustrated. Philadelphia: Lea & Febiger. 1922. Price $5.50.

According to the author, vital statistics show that, of 2806 deaths of infants occurring in Chicago during one year, 739 deaths in the first month of life were due to prematurity. Of 860 who died during the first twenty-four hours, 399 deaths were due to premature birth, while of 1700 who died during the first week of life, 588 deaths were due to premature birth.

These excessively high figures of mortality among prematurely born children are quite sufficient to emphasize the need of a special treatise on what might be called the prophylaxis and treatment of prematurity. Doctor Hess has divided the text of his book into four parts, dealing in the first with the etiology, physiology and pathology of prematurity. In the second part, the nursing and the feeding care are discussed, it being a self-evident proposition that the management of prematurely born children require special attention and that it presents problems not only different from (in many ways) but also more difficult than those of the infant born at term. The third part treats of diseases that are found more frequently among prematurely born children and the fourth part inquires into the prognosis of prematurity and into the future of the premature infant.

WEBSTER: "ANESTHESIA"

The Science and Art of Anesthesia. By Colonel William Webster, D.S.O., M.D., C.M. Illustrated. St. Louis: C. V. Mosby Company. 1924. Price $4.75.

Anesthesia as a science and art does not seem to have received its due consideration in the teaching of medical students. The subject itself is looked upon as a branch of pharmacology; but, with the vast amount of drug material to be gone over in the pharmacologic curriculum, it leaves little or no time for an extensive course or discussion in anesthesia.

The medical student, as well as the physician, however, should not neglect the opportunity of reading the interesting pages as expressed by Doctor Webster.

The book contains an interesting historical sketch on anesthesia as well as a chapter on the physiology of anesthesia. Other chapters are devoted to the various forms of anesthesia, together with illustrations showing the various types of inhalers, gas machines and other appliances used in the art of giving an anesthesia. The selection of an anesthetic for the various types of operations is carefully set forth in the text. Generally speaking, the material in the book is well written and well organized, and its recommendation as a standard text for the medical student should receive due consideration.

GOSLEE: "CROWN AND BRIDGEWORK"

Principles and Practice of Crown and Bridgework. A treatise upon the modern methods of restoring natural teeth, and of replacing missing teeth by means of artificial crown and bridgework. By Hart J. Goslee, B.S., D.D.S., F.A.C.D. Fifth Edition. Brooklyn: Dental Items of Interest Publishing Co. 1923.

Dr. Goslee's writings on crown and bridgework are well known, and this fifth edition of his work, the first of which was published in 1903, should serve as a modern and practical text and reference book for teachers, practitioners and students of dentistry. The book consists of 578 pages of easily read type, profusely illustrated with drawings and diagrams.

It is divided into six main divisions, including history of crown and bridgework, the principles and technic of crownwork, the principles and technic of fixed bridgework, the principles and technic of removable bridgework, principles and technic of clasp denture construction, and final considerations as to the insertion of gold fillings, removing, repairing, finishing, polishing and mounting.

The last previous edition of this book was in 1913, since which time many important advancements have been made, and these are incorporated in this work, making of it an up-to-date and worthwhile text.

POLAK: "GYNECOLOGY"

A Manual of Obstetrics. By John Osborn Polak, M.Sc., M.D. Second Edition. Thoroughly Revised Illustrated. Philadelphia: Lea & Febiger. 1922. Price $4.50.

Here is a useful manual of medical gynecology.

Current Commercial Literature

To assist doctors in obtaining current literature published by manufacturers of equipment, pharmaceuticals, physicians' supplies, foods, etc., CLINICAL MEDICINE will gladly forward requests for such catalogues, booklets, reprints, etc., as are listed from month to month in this department. Some of the material now available in printed form is shown below, each piece being given a key number. For convenience in ordering, our readers may use these numbers and simply send requests to this magazine. Our aim is to recommend only current literature which meets the standards of this paper as to reliability and adaptability for physicians' use.

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